THE FARMERS' REGISTER.

VOL. VI. OCTOBER 1, 1838. No. 7.

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From the New England Farmer.

MATERIALS FOR MANURE.

We have spoken of various sources and means of accumulation and manufacture in regard to manures; the barn cellar, the hog sty, the privy, the compost heap, the wash tubs, the sink; in respect to all these matters we have made suggestions, which we hope will be taken in good part by the farmers; and which we are persuaded, if properly attended to, will result in accumulations of valuable manure little dreamt of, when the foundation of the heap was laid, and the first contributions brought to it. The sailors tell us of extensive islands, holding a large population and feasting them in plenty, and reefs stretching themselves for miles in the ocean, and columns of coral rising from the very depths of the sea to its surface, and if the sea could be for a time withdrawn, and their vast height and proportions disclosed to the eye they would be seen casting into the shade even the mighty pyramids of Egypt and the proudest trophies of human art and labor; and all these were the result of the combined and unintermitted toil of very small insects, laboring constantly at these erections by the gradual deposits of minute atoms. These mighty masses show what can be effected by persevering labor, even with most humble instruments and means. The termites or ants of Africa erect large cabins, which, spread out upon extensive plains, look like a vast military encampment. We see constantly upon our own pitch-pine plains, those heaps which the common pismires accumulate; and observe that all this is the product of single atoms brought by single individuals of those minute animals, thousands of whom we destroy at a single footstep. Every part of creation illustrates the extraordinary, immense, and triumphant results of persevering labor. Many of the largest fortunes that have ever been accumulated have arisen from minute savings and deposits.

We hope our illustrations of this homely subject will not be deemed too ambitious. We should be glad to make them as striking and memorable as possible; and we care little for the source whence they are drawn, provided only we can induce the farmers to gather every thing, and to save every thing, which comes in their way, by which the means of enriching their farms may be created or extended. We reiterate the great position, that almost every farm, certainly where its products are consumed on the place, contains the means of maintaining and extending its fertility. Every traveller who visits China, reports the extraordinary condition of the Chinese cultivation; and concludes by stating that the most remarkable and particular attention is paid to the saving of manure. If gold dust, if corn itself, were sprinkled in their streets, they could not be more careful in picking it up and collecting it together, than they are in picking up and collecting whatever may go to the increase of their manure heap.

It is in this matter our farmers fail, perhaps more than in any thing else connected with our agriculture; and this is a failure most essentially affecting their interests. If we would have an improved agriculture, a revolution in our habits must take place here; and when this is effected, and all the manure is provided and prepared, which we can provide and prepare, we have accomplished comparatively half the work. The getting of manure on a farm must be as much matter of study, care, and labor as the getting of crops from that farm.

We are of opinion that on every considerable farm there should be a man employed with a cart and horse or yoke of oxen, whose sole and exclusive business it should be, excepting in some extraordinary emergency, to collect the materials for manure; and to put them in the way of being manufactured. It is not enough for the farmer to say he will do this at his leisure; this shall be the business of odd times; he will attend to this when nothing else presses upon him. It must be a specific, constant, principal object of study and labor. Remember again that every vegetable substance, and every animal substance, is capable of being converted into a manure.

Now we will look out of the window where we are sitting, and see what in hasty glance comes within our sight, which ought to be saved. There is the garden, with an abundance of weeds and decayed vegetables; collect all them, and let them go into the hogs' pen or the barn cellar. There is the pasture, where bramble bushes, sweet fern, Canada thistles, alder bushes, brakes, &c. abound. Gather them, and you will at the same time clean your pastures. There is the road lined for miles with all sorts of weeds and coarse grasses; get them. There is many a mud hole, which receives the washings of the streets, and where a great deal of valuable and rich manure has been collected; empty that. There is a large shade tree, where the cattle daily collect; and where their droppings are accumulated; collect these and them in the common heap. There is many a rich spot by the side of the roads, which without any prejudice to your neighbor or the public you can plough up; take off the mould, and carry that likewise into your manure yard. There is the refuse of the shoe shop, scraps of leather, &c., collect them and lay them on your land to be ploughed in. There is a clay pit; occasionally get a load or two of that and throw into your barn yard. It will greatly improve the composition. Then you have a wood or grove at hand; collect the leaves from that and lay them in store for littering your cattle-stalls and your sties. But you have a bog meadow; here then is an abundant supply of the materials for enriching your fields. Collect this mud; it is full of the most enriching substances. They may be spread with great advantage upon your grass lands; but they are still better placed upon your compost heap.

We have seen an excellent arrangement on the part of two or three farmers for saving manure, and especially the liquid portions. They daily spread the back part of their cow stables with mould or sand, of which both in winter and sum-

mer they keep a sufficient supply at hand under cover; and using this without covering, or covering it with litter, great amount of the most valuable manure is saved.

We have thrown out these hints, not thinking to treat the subject fully, or philosophically; but rather with a view to put other minds to considering what can and what ought to be done. In new countries, where the accumulations of vegetable matter have been gathering for centuries, and have remained on the surface untouched, there is no occasion at present for the use of any manures. The soil is already full and needs rather to be exhausted than replenished. But it is not so with our old soils. We cannot get along without manure. The *geine*, the vegetable pabulum, must be supplied. We have, as Dr. Dana says, the plates, but they require to be filled. We might sit down to a table covered with the richest porcelain or burnished and embossed gold; but if the dishes are empty, we should starve as certainly at such a table as at a naked board. Dr. Dana is likewise of an opinion, in which Professor Hitchcock concurs, that the earthy constituents of the soil are matters of comparatively little moment, provided always of course that they exist in commixture, and are sufficiently retentive of moisture. That is, to recur to the former illustration, it is of little or no comparative importance what the plates are made of, or whether the table at which we sit down be plain deal, oaken, or mahogany; the main point is the food, which is placed upon it. This appears constantly. In our disdained and hard soil, crops are occasionally produced, which vie with any thing which even the fertile alluvions of the west display. One hundred and thirty bushels of corn were raised upon an acre in Plymouth county. Forty bushels of rye, ninety-six bushels of oats, fifty-five bushels of wheat, one thousand bushels of carrots, more than nine hundred bushels of ruta baga, seven hundred bushels of potatoes, and more than four tons of hay have been raised upon an acre even in our own granite soil. The incredulous may sneer at this; that does not at all affect the facts. It neither makes, nor unmakes, nor alters them. They are established by full and incontrovertible evidence. This however has been done by liberal cultivation, liberal manuring, applied with sound judgment; at proper times and in a proper form.

The collection of this manure and its application to the soil and crop is, we admit, laborious, and requires incessant care and diligence. In this respect the new countries have immense advantages over us; and when we compare our severe and expensive cultivation, with their little expense and abundant returns, we are often half disposed to pull up our boots and put on our hat and gloves. But then we come back to the great established position, that agriculture in almost any part of New England having ordinary advantages, where conducted with skill, judgment, and frugality, affords an ample remuneration for all the toil and all the expense incurred; and when we recollect the multiplied social advantages which our community presents over every new country, and take another deep draft of its invigorating mountain breezes, we throw aside our gloves and put on our frock again, and whistle to our team to go ahead.

From the Maine Farmer.

SWINE.

Mr. Holmes:—In no part of the United States can the raising of pork he made a more profitable business than in the state of Maine. In making calculations of the profits of swine husbandry, we should take many subjects into consideration.—First of all, let us notice manure—always acknowledged to be the basis of all good husbandry. I have heard it asserted that many of the farmers of Massachusetts say that the manure a hog will make, when well supplied with materials, will pay all the expense of his keeping. If this supposition is correct, then we can raise pork as cheap as our southern or western brethren, whose swine subsist and fatten or what grows spontaneously.

Every farmer should have his hog pens and his hog yards so modeled that no manure be lost. If the hog yard is upon descending ground, it should be so contrived by digging, that none of its virtues may escape in a liquid state; and if the liquid part of the manure in the hog pen escapes through the floor, it is an unpardonable waste, unless the farmer should cart an abundance of loam and put it beneath the floor of his hog sty, to absorb those rich juices, which are annually lost, if he cannot devise a better method.

Every farmer in the state should be ambitious to obtain the very best breed of swine that can be procured. A poor breed of swine, or in fact any kind of animals, is a dead loss upon the community. Nothing is wanting but a little energy, and a union of efforts, to get rid of all unprofitable stock and substitute in its stead that which will be highly profitable.

It has been said, that in order to raise swine, it is necessary that the farmer should have a large dairy; but I do not think this absolutely necessary. A farmer who has not large quantities of milk to spare for his pigs, may give them other kinds of nutritious food; and probably they may be made to thrive well in a clover pasture, without much other food.

Now let us notice the method of management practised by Arthur Young, esq., of Great Britain, in the management of swine. It is said that in the summer of the year 1766, he pastured 64 swine on only two acres of clover ground. He assures the public that all these swine grew very fast; and also gives it as his opinion, that this use of clover is much more profitable than when converted into hay. Now why cannot a New England Yankee, by practising the same method, realize the same results—even in the state of Maine? Dr. Dean says that it is an excellent piece of husbandry to make a hog pasture of an orchard; and he tells us that an orchard may be prepared with clover as well as any other spot of ground.

I think it is bad husbandry to put apple trees upon good tillage lands. If the farmer has stony ground, that is not easily tilled, there he should plant his orchard. The grass in orchards (especially if the trees be large and stand near each other) is not so sweet and nutritious as that which grows on ground unencumbered with trees; still I think, for many reasons, swine should run in orchards. If the trees in an orchard be too large or too thick to admit of tillage, the little patches between the trees may be ploughed as often as necessary, and sowed with fresh clover seed: to

sow a few oats is also a good idea. The farmer need not plough his whole orchard at once but he may plough a part every year,—by so doing he may constantly improve the soil at a very light expense.

If it be admitted that hogs should run in orchards, still I think that every farmer who would raise a considerable number of swine, should set apart at least one acre of land adjoining his orchard, for the purpose of cultivating clover for his swine.

This acre should be kept one half in tillage and the other half in clover, alternately; and as clover is a biennial plant, is best to change from grass to tillage, every second year; thus affording a constant supply of fresh clover. By so doing hogs will not be compelled to feed wholly upon grass growing in orchards. And last, not least, by pasturing land with swine, and sowing clover seed abundantly, the farmer may enrich his soil in an eminent degree.

The winter food for swine should be principally roots, which should be boiled or steam-boiled. This is winter work, and the farmer cannot be more profitably employed. If potatoes are boiled, the water should be immediately drained off. The water in which potatoes are boiled, is of a poisonous nature, and injurious to swine or cattle.

In this state I think it is bad economy to raise much corn or grain for store swine. A warm tight shelter is very necessary for the hog in this cold climate, and this animal, so epicurean and gentlemanly in his diet, must be well lodged, or he will not thrive. An abundance of litter should be furnished him, and this mode of consuming straw is more profitable than when used as fodder for cattle, even if mixed with ruta baga. I would not have it understood that farmers should consume all their straw as litter for swine, but merely that they should not be too stingy in this matter.

I will now say something in regard to the fattening of swine. He that makes the greatest amount of pork at the least expense is the best farmer. Mr. Young undertook a number of experiments to ascertain the cheapest mode of fattening swine, and it is said he gave the preference to boiled carrots.

If good pork can be made by feeding swine with carrots, I think it bad economy to consume much corn or grain for this purpose—at least till we can do away the necessity of "going to New York to mill." But the hog is very fastidious in his diet; he must be gratified with a variety or not thrive, therefore I think some kind of meal should be mixed with his food. Meal made of buckwheat, millet, oats, peas, and barley, are all good: let experiments demonstrate which kinds are best. Swine should be at all times supplied with salt, as well as neat stock. Swine under the process of fattening, should also be furnished with *sauce*, as well as other epicures; such as boiled apples or boiled pumpkins. O! pumpkins,—has any Yankee learned how profitable are boiled pumpkins for fattening swine? To give fattening swine occasionally a quantity of boiled apples or pumpkins will increase their appetites for their other food. One cart-load of pumpkins when boiled is worth two cart-loads of potatoes. How many cart-loads of pumpkins can be raised upon an acre of land properly cultivated and manured? Will farmers try the experiment?

If our farmers are true to their best interests, we can say to our southern and western friends: Whatever else we may want of you—whether it be tobacco, rice or cotton, we will not take your pork.

Rumford, July, 1838. R.

From the Penny Magazine.

NATURAL HISTORY OF THE HERRING, (CLUPEA HARENGUS.)

The herring is found in the third order in Cuvier's arrangement; and with the pilchard, sprat, shad, anchovy, and white-bait, belongs to the Clupeæ genus. It weighs about five ounces and a half. The upper part of the body is blue and green, and the lower parts of a silvery white. Owing to the gill-lids being very loose and opening wide, the herring dies almost the instant it is taken out of the water; hence, perhaps, the saying, "as dead as a herring." In twenty-four hours the gill-covers present an extravasated appearance. The lower jaw is furnished with five or six teeth; the interior edges of the upper jaw are serrated; and on the tongue there are also small teeth. The food of the herring consists of minute animals which are found in the depths of the ocean; but they will also feed upon the young of their own species, and they may be taken with limpets and also with an artificial fly.

The herring is not found in warm regions, nor farther south than the northern coasts of France. The most interesting point connected with its natural history is the annual movement which it makes. Pennant, whose zoological labors entitle him to much respect, about the middle of the last century gave an account of their periodical migration, which has been implicitly copied by nearly every succeeding writer. He represents them as coming from their great winter rendezvous within the Arctic Circle. "They begin (he says) to appear off the Shetland Isles in April and May. These are only forerunners of the grand shoal which comes in June; and their appearance is marked by certain signs, by the numbers of birds, such as gannets and others, which follow to prey on them; but when the main body approaches, its breadth and depth are such as to alter the very appearance of the ocean. It is divided into distinct columns of five or six miles in length and three or four in breadth, and they drive the water before them with a kind of rippling; sometimes they sink for the space of ten or fifteen minutes, then rise again to the surface, and in bright weather reflect a variety of splendid colors. The first check this army meets in its march southward is from the Shetland Isles, which divide it into two parts. One wing takes to the east, the other to the western shores of Great Britian, and fill every bay and creek with their numbers. Others pass on towards Yarmonth, the great and ancient mart of herring; they then pass through the British Channel, and after that in a manner disappear. Those which take to the west, after offering themselves to the Hebrides, were the great stationary fishery is, proceed towards the north of Ireland, where they meet with a second interruption, and are obliged to make a second division. The one takes to the western side, and is scarce perceived, being soon lost in the immensity of the Atlantic; but the other, which passes into the

Irish sea, rejoices and feeds the inhabitants of most of the coasts that border on it." In a work on subjects of marine natural history, published not more than a year ago, this account is substantially repeated, and it is stated in addition that the different columns are led by herrings of more than ordinary size. Other writers have stated that the annual visitations of the herring are adjusted with the most scrupulous precision to the character of the country along which they pass, and that wherever the soil is meager and the climate severe, there they never fail to resort. This is going much farther than Mr. Pennant, who notices the caprice which the herrings exercise with regard to their haunts. The promulgation of these and similar erroneous notions is productive of mischief in various ways. The belief that a particular part of the coast was invariably haunted by the herrings, excited hopes of commercial prosperity from the fishery, and led to the formation of establishmeuts which it was afterwards found necessary to abandon, owing to the laws which direct the arrival of the fish being so completely fluctuating. Factitious views of the designs of Providence have been taken, which, being founded on error, were liable to be suddenly overthrown; whereas, within the bounds of ascertained facts, there are to be found abundant manifestations of beneficent design, the evidence of which rests upon a more secure foundation. The very uncertainty which characterizes the herrings in the choice of their haunts is attended with advantage, as it occasions attention to be directed to agriculture and to other means of subsistence than that which the ocean supplies, and thus the chances of scarcity are lessened.

So far from the arctic seas being the great resort to which the herrings retire for the winter after having deposited their spawn, it is nearly certain that they are not in the habit of leaving the seas on the shores of which they periodically appear. They leave the shore for the deep sea, and the return of warm weather agains brings them around the coasts. The herring, it may also be stated, is nearly unknown within the polar seas, and has scarcely been observed by the navigators of those regions; nor are they taken by the Greenlanders. A small variety of the herring is sometimes found, and is noticed by Sir John Franklin. The young are found at the mouth of the Thames, and on the coasts of Essex and Kent during the winter. The Dutch at one period carried on the fishery in the deep sea at all seasons. On the western coast of Scotland the fishery has sometimes terminated before that on the eastern coast has commenced. It has sometimes commenced earlier in a southern part of the coast than further north, and on the western coast of the county Cork, before any other part of the United Kingdom. These facts are all adverse to the accounts which have been given of a grand movement in military order from the arctic seas. On the east coast of Scotland the herrings often spawn at a different period from those which resort to the western coast, and at the same time their condition is quite dissimilar. Mr. Jesse, in his "Gleanings in Natural History," states that the herrings of Cardigan Bay are much superior to those taken at Swansea. Dr. Macculloch* is of opinion that this may arise from their obtaining more abundant or different food. He states that in Scotland no migration takes place even between the two coasts, and that when the herrings first appear on the western coast it is not in shoals; and instead of being taken by the net they are taken by the line. Sir Humphry Davy has remarked as follows in his "Salmonia:" "It has always appeared to me, that the two great sources of change of places of animals, was the providing of food for themselves, and resting-places and food for their young. The great supposed migrations of herrings from the poles to the temperate zone, have appeared to me to be only the approach of successive shoals from deep to shallow water, for the purpose of spawning." The presumption, therefore, is that the herring is a permanent inhabitant of our seas, and that there are different varieties of the species. Mr. Yarrell* says:—"There are three species of herrings said to visit the Baltic, and three seasons of roe and spawning. The stromling, or small spring herring, spawns when the ice begins to melt; then a large summer herring; and lastly, towards the middle of September, the autumn herring makes its appearance and deposits its spawn." The same naturalist has discovered what he believes to be a second species of British herring; it is found heavy with roe at the end of January, which it does not deposit till the middle of February. The flavor is milder than that of the common herring, but it is not so large, its length being seven inches, and its depth two.

The frequent changes of their haunts by herrings have been a fruitful source of speculation, though this fact is adverse to the accounts which gave to their migration all the regularity which would seem to belong to so well organized an army. At one time they frequent a particular part of the coast for several years, and they afterwards suddenly abandon it. The change is doubtless occasioned by circumstances which it is their nature to obey. In the time of Charles I, the Long Island, one of the western islands of Scotland, was a favorite resort of the herring, and buildings were erected for the purpose of establishing a fishery, but it was abandoned in consequence of the fish ceasing to frequent that part of the coast. Dr. Macculloch, in his work on the "Highlands and Western Isles of Scotland," has introduced some remarks which are too apt to be omitted in this place. "As vulgar philosophy (he says) is never satisfied unless it can find a cause for everything, this disappearance of the herring has been attributed to the manufacture of kelp. But kelp was not introduced for very many years after the herrings had left the Long Island, as well as many other coasts which they had frequented. It is also a popular belief that naval engagements, or even the firing of guns, cause them to change their haunts. Thus their desertion of Sweden was attributed to the battle of Copenhagen; and now, when guns are at peace, the steamboats are the "sufficient reason." The one reason is as valid as the other. It is a chance if there has been a gun fired in the Western Islands, since the days of Cromwell, and they have shifted their quarters within that period many a time. They have long left Loch Hourn, and Loch Torridon, where steamboats never yet smoked; and since the

* "The Highlands and Western Isles of Scotland," by John Macculloch, M. D., F. R. S.

* "A History of British Fishes," by William Yarrell, F. L. S.

steamboat has chosen to go to Inverary, they have also thought fit to prefer Loch Fyne, to all the western bays. But theories like this have at least the merit of antiquity. Long before the days of gunpowder, the ancient Highlanders thought that the fish deserted those coasts where blood had been shed; so that the gun hypothesis is only an old one revived, with the necessary modifications."

Assuming that the herring approaches our shores from the deep surrounding seas, and does not migrate from the polar seas alone, there are three different circumstances which may occasion its movements: 1. For the purpose of spawning. 2. In pursuit of food. 3. To escape from enemies which prey upon them.

The herring spawns towards the end of October or the beginning of November; and for the purpose of vivification it is necessary that it should be deposited in shallow water, where it may receive the heat of the sun. This instinctive movement is felt in the middle of July, and they are thus brought within the reach of man when they are in the highest perfection. They are worthless as food after having deposited their spawn, and the fishing season of course terminates. Mr. Yarrell is of opinion, from repeated examination, that the herringsile, or young herrings, do not mature any roe during their first year; and hence they are not impelled to retire to the deep sea, but haunt the coasts. The weight of spawn in the herring is 480 grains, and the number of eggs between 3,000 and 4,000. This spawn has been thrown ashore in Orkney, found around the Isle of Man and all along the western shores of Scotland, and in the western lochs. A greater degree of observation would most probably prove that it is deposited around the British coasts generally, particularly the coast of Scotland.

Fishermen have remarked that the herring was most abundant where the medusæ, and other marine animals which give the sea a luminous appearance, were to be found. The movements of herrings are doubtless frequently determined by the time and place where food is abundant. If it is not to be found in one spot it must be sought for in another; and the apparent caprice which they show in frequenting places at irregular times and irregular intervals, is determined by a provident regard to the abundance of food with which those places are supplied.

Lastly, in endeavoring to escape from whales, grampuses, sharks, and other enemies, the movements of the herring are the result of necessity; and nothing seems more unlikely than that they should, under such circumstances, display an instinctive attachment to particular places.

DESULTORY REMARKS ON THE SILK CULTURE OF THE UNITED STATES.

It has now been several years since sundry companies were chartered, in the northern states, with large capitals, (nominal or real,) for the purpose of prosecuting the culture and manufacture of silk. Many more such companies have since been formed, and have commenced operations; and, latterly, some have been established even in the lethargic south, and in the climate by far more proper and suitable for this business than that enjoyed by our industrious northern countrymen. The operations of these large joint-stock corporations are in addition to those of hundreds of individual adventurers, who have commenced, on their separate account, what is called the "silk-business." The first object of all efforts to cultivate silk, is, necessarily, to raise mulberry trees, to furnish food for the worms; and the kind planted has been principally the Chinese mulberry, or *morus multicaulis*. The facility of propagating this variety, by cuttings, is so great, its growth so rapid, the annual multiplication of plants so enormous, and the maturity of each (to the point of supposed fitness for feeding,) so early, that two years' time would suffice to raise a very large supply, from a commencement with a few hundred young trees; and, in three years, the number might be made equal to almost any demand of a single silk establishment, of no older standing. There are also powerful incentives to use these facilities, in the liberal legislative bounties offered for the production of silk, by at least six of the northern and middle states. In Maine, the bounties paid from the treasury for this object, are 5 cents a pound upon all cocoons grown, and 50 cents on each pound of silk reeled. In Vermont, a bounty of 10 cents is offered for every pound of cocoons. In Massachusetts, $2 the pound is paid, as bounty, on all silk grown, reeled, and "throwed" in the state, "which bounty alone is considered by silk-growers to be sufficient to defray all expenses attending its growing, reeling and throwing." (Mr. Adams' Report to Congress. See Far. Reg. Vol. V, p. 65,). In Connecticut, (where silk has been grown 50 or 60 years, without legislative fostering,) the treasury pays a bounty of $1 on every 100 Italian or Chinese mulberry trees of five years old, and 50 cents a pound on all silk reeled on an improved reel. All these bounties were in operation as early as 1836. We do not know the rate of bounty paid by Pennsylvania and New Jersey; but they are so high, (as stated in a previous selected article on page 355 of this Vol.) as to "have been found sufficient to pay all the expense of producing the cocoons and reeling the silk, making the whole produce clear profit."

With such facilities and such inducements for the production of silk, it is very remarkable that so little has yet been accomplished, by all, or by any, of the numerous companies and individuals who have undertaken the business. Wonderful reports are made, and published with great parade in the newspapers, of the prospects, and intended operations of almost every newly established silk company; but little, if any thing, is afterwards heard of what they have actually produced. It is not to be supposed that reports of successful operations would not be published if there were sufficient grounds on which to place them; and therefore, though the testimony is negative, it is still satisfactory to establish our inference, that but little has yet been done in producing silk; and that silk-culture on a large scale, and as a profitable branch of agriculture, is yet to be commenced in this country. Judging from the various prefatory reports of silk

companies, and deceived by their confident tone, we had formed a very different opinion; and by republishing their reports in this journal, we may have, unintentionally, helped to delude the public. If the adventurers in silk-culture in the northern states have really done much in producing silk, the facts have not been made public, in any way comparable to the industry used to extend the publicity of their first expectations and intentions.

The only certain and direct evidence of the very small amount of silk yet produced, which has reached us, is in the "Statistical Tables" formed and published by order of the government of Massachusetts. From this work it appears that all the silk factories of Massachusetts (four in number,) in the year ending April 1, 1837, employed 125 hands, and produced of manufactured goods, the value of $56,150. This does not show how much raw silk was produced; but the probability is, that these factories worked up all the silk made in Massachusetts, as the larger portion of their raw material was certainly of foreign growth.

A gentleman of Virginia, who was desirous of going into the silk culture, and has since done so, last year visited the principal silk establishments in the northern states, for the purpose of gaining information as to their operations and the results. He told us that the greatest annual product of raw silk which he could hear of, at any one establishment, amounted to no more than 40 pounds. It was true that at some of them, silk manufactures were carried on; and they had been at others, which had suspended or stopped manufacturing, on account of pecuniary difficulties; but the materials for these manufactures were mostly imported from foreign countries.

The only inference which we can draw from the information before us, and the testimony above referred to, positive and negative, is, that most of the adventurers in the silk business (so called,) have considered the making of silk as a secondary, ulterior, and perhaps contingent object, and have been laboring and speculating in the culture of mulberry plants, not to feed silk-worms, but to sell to newer adventurers; and the vast profits to be derived from the making of silk, were held up to the public principally to produce greater eagerness to purchase the plants and cuttings of Chinese and other varieties of the mulberry, at the enormous and extortionate prices at which they have been sold. The article at page 355, headed "*Morus Multicaulis*" is a capital specimen of these stimulating reports. This may be a *bona fide* and disinterested statement; but certainly it has every appearance of a salesman's indirect puff—such as are at least half the publications on this subject which have appeared. There is no advertisement so effective as that which appears in the false guise of editorial approval and recommendation.

But without the advance of prices, which this writer anticipates, for plants of the *multicaulis*, those heretofore obtained are sufficiently high to make it far more profitable to sell the plants, than to keep them to feed silk-worms on, or than to pursue any other branch of agricultural industry. From every single cutting of one bud, (allowing for all necessary risk of loss and failure,) may be raised, in one year, a plant of four feet or more in height; and such plants, (of one year's growth) divested of all the side branches, have been sold regularly and readily at $25 per hundred; and the twigs, trimmed off, at $2 per hundred buds—and a single plant will sometimes produce a hundred such buds. An acre of rich land will bring more than 10,000 plants, and the crop is completed and ready for market in one season. By cutting off the whole tops, at the ground, (so as to take away every bud,) each root will, in the second summer, produce three or four times as many buds as in the first year's growth, to be again cut off and sold. Were there ever greater profits offered? And is it not perfectly natural and reasonable that these profits should be preferred to those offered by silk-culture proper, even though doubled by legislative bounties?

Thus the true, and, as we fully believe, the great profits which may be realized by rearing silk, have been lost sight of, and disregarded, to reap the greater though transitory profits of selling mulberry plants. And the combined action of the cunning salesmen and puffers, and the strong disposition of the public to be duped and cheated by every professional humbugger, has produced a *multicaulis mania*, that promises to equal any of its fore-runners in the annals of speculation and delusion. Enormous profits have thus already been made by northern nursery-men, and much of them from southern purchasers. And we are sorry to learn that the same spirit is spreading rapidly in Virginia; and that many persons are now beginning what is called the "silk-business"—but which is merely raising mulberry plants and cuttings to sell. And a profitable business this may be, to early adventurers; though a bad one for all the later ones, who do not design to put their mulberry trees to their legitimate use of feeding silkworms. It is plain enough, that even if millions of dollars should be received for plants that are not used, first or last, for any purpose except to be sold, that there will be no gain to the community; and a total loss to the buyers and producers who cannot sell. It is thus that truly valuable products, and a profitable branch of agricultural industry if properly pursued, may be converted into a humbug, and become one of the many modes of producing deception and loss to dupes, and profit to the dupe-makers.

What adds to the strangeness of the slow advance of the product of silk in the north, is the fact that there existed, for several years, two periodical journals, published at a low price, and circulated very extensively, which were devoted exclusively to giving information on, and encouraging the extension of silk culture. These were the 'Silk-Culturist' of Hartford, and the 'Silk-Worm' of Albany. Another such publication has recently been started in another state. Here is a most prodigious and imposing array of means; and the end, or result, is in comparison ludicrously small, even though it may exceed ten-fold the amount of that of which we have yet been informed.

There has been another new branch of agricultural industry proposed in this country, and (if we were to judge from printed reports,) it might be said was com-

menced, more than eighteen months ago. This is the making of sugar from beet-roots. The reported profits of this business in France caused a very general desire to introduce it in the northern and middle states. The statements published (many of which are to be seen in our pages,) seemed to promise sufficient remuneration to the undertakers. In addition, the legislature of Massachusetts, in the beginning of 1837, offered a bounty of three cents a pound on all sugar made in that state from beet-root, (see Farmers' Register Vol. V, page 47.) There was then growing a strong beet-root fever, which has continued since, and we have no direct testimony of its abatement at this time. But neither have we yet heard of any practical results, or profits from the business—nor indeed whether any thing has been done in it, except (according to usage,) to form joint-stock companies for carrying on the culture and manufacture. Strangely enough, since schemes of beet-root culture have been in vogue, they have been regularly connected with the schemes of silk-culture. Yet, what the two things have to do with each other, is more than we can conceive—or what they have in common, except the quality of being converted into humbugs. The joint-stock companies latterly formed for silk-culture, or proposed and announced in the newspapers, have very generally added the making of beet-root sugar to their objects, and the title of the association. This incongruous yet very general connexion has been even carried into the proceedings of the congress of the United States; and a long and detailed report has been sent forth from the Committee of Agriculture, on the cultivation of the "Mulberry and Sugar-Beet," in a pamphlet of 51 octavo pages; of which many thousands have been printed and circulated, to add to the profit of the government printer, and to help the nursery-men, whose letters are there published, to sell their mulberry plants. With so much encouragement, direct and indirect, by both state and federal government, it is truly surprising that both the silk-culture and beet-sugar-manufacture should be still unable to give evidence of life, or to make any figure, except in reports of the formation of joint-stock companies, and their intended operations.

It will, perhaps, be inferred, though very erroneously, from the general tenor of the foregoing remarks, that we have no faith in the profit of producing silk in this country, nor in the legitimate profit of rearing the Chinese mulberry as means for that end. Not so, as to either opinion. Still, because of our endeavoring to expose the delusion, and repress the misdirected zeal, and speculating spirit, which have been built upon the true and solid claims of this business to approbation, we expect nothing more than to be considered as opposing, throughout, the culture of silk as altogether unprofitable, and the Chinese mulberry as worthless; and its being raised by any one as an evidence of his being either a knave, or a dupe of knaves. It seems that moderate, qualified, and discriminating approbation of agricultural opinions and practices, is no more tolerated, by most persons, than similarly limited approval of the political men and measures that they sustain. Every man is required, whether on agricultural or political subjects, to "go the whole hog," and to approve or condemn, as entirely as does a blind or bought political partizan. Qualified and limited approval, is considered as but "damning with faint praise." We therefore do not expect to leave the impression on readers in general, that we are friendly to, and strongly in favor of, the commencement and extension of silk culture. This expected misapprehension cannot be entirely guarded against, and we shall not take much trouble to avoid it, or lessen its influence. We will merely state, that we have no private interest whatever in discouraging silk-culture; and that we have some small private interest the opposite way, inasmuch as we are preparing to come into the market with *multicaulis* trees and cuttings, as soon as we can furnish them at one-fourth of the present prices.

We certainly doubt the fitness of the climate of the northern states for profitable silk-culture; and more than doubt the fitness of that cold and inhospitable region for so tender a plant as the *morus multicaulis*. But we fully believe in the suitableness of the slave-holding states for both; and we are confident that fair trials will show very profitable results. And if the doubts and disbelief just expressed, are indeed unfounded and unsound, and New England is, in truth, well adapted for silk-culture, then, *a fortiori*, so much the more profitable must it be in Virginia, because of our warmer and longer summers. We have also other advantages (which we have several times before urged) in our far cheaper land, and cheaper slave-labor. Many slaves could be producers who now are merely consumers. We are now, as heretofore, and as also frequently expressed, anxious that the business of raising silk shall be properly commenced and pursued in Virginia; yet we have but little favor for, or confidence in, the new-born zeal for raising mulberry plants merely to sell at great profit, to other persons, who will buy them with precisely the same object. It is but a new type of that spirit which showed itself in the Merino sheep mania, which formerly prevailed, and in the far more injurious race-horse-breeding mania, which is now at an unprecedented height in Virginia.

The *morus multicaulis* is undoubtedly a most choice variety, and it offers greatly increased facilities to the young silk-culturist. Whoever is desirous of commencing the silk business, and is without mulberry trees, or enough of them, ought certainly to plant this kind in preference; because from its ease of propagation, and rapid growth, it can more speedily supply enough food for the worms. Moreover, from the larger size of the leaves, they are gathered with much less labor; and from their superior nutritive quality, a less weight will serve to feed a given number of worms. It is also *said* to produce the finest and best silk. This may be so; but it is far from being satisfactorily established. And even if so, a countervailing objection, held by some in France, is, that the fibres are weaker than silk produced from other kinds of mulberry leaves. But neither this nor any other foreign kind is indispensable. If the new beginner has enough of the native mulberry, (*morus rubra*,) though it has been pronounced, and generally admitted, to be worthless, compared to the white, and Chinese, we would advise him to proceed to raise and feed the worms, without wait-

ing for the growth of any other kind. This kind of food is perhaps equal to any, and will be at least quite good enough for the other parts of his early management; and, in the mean time, by planting a few thousand cuttings of the *multicaulis*, of a single bud each, with careful culture, any desirable number may be raised in as few years as will be necessary for the adventurer to learn how to manage his worms, and their products. We would further urge on every farmer who has the least idea of hereafter trying the business, to plant a a few of these trees as a stock to propagate from, if needed. But we also ask him not to believe that this, or any other particular kind, (as either Brussa, Canton, &c.) is so far superior to others as to be indispensable; and we advise him not to buy them, or at least but very few of them, at the exorbitant prices which the always easily gulled public have heretofore paid, and which are now threatened to be advanced.

The northern nursery-men have as yet had the supplying of the southern demand for these plants, although at double the prices at which far better plants might have been bought in Virginia. John Carter, near Richmond, who went early (too early, as it seemed,) into this business, for want of purchasers, had to dig up and throw away thousands of young *morus multicaulis* trees, after they had grown so large that he could not spare them the ground they occupied. Subsequently, he sold the remnant to a great northern nursery-man, at less than half the price at which these (or much worse ones, if not these,) were sent back from New York, and sold in Virginia, and in some cases probably to gentlemen not far from Richmond, but who had not heard of any supply to be obtained except from northern nurseries. The farther north the plants are raised, and the more careful and more forcing their culture, the worse they are to propagate from. The northern nursery-men endeavor to remedy the defect of their climate by using the richest soil, and the most stimulating culture. The plants are pushed in growth unnaturally; and when winter stops their further vegetation, half the year's increase of wood is immature, and is so succulent and tender as to be unable to stand the winter, and unfit to raise from, even if kept through winter sheltered from frost. These immature buds, however, *will sell*; and they are fit for nothing else. A southern plant, raised without forcing culture, is worth more, to propagate from, than half a dozen from a northern nursery, of equal size. This has already been fully proved in Virginia, by those who have bought plants and cuttings from the north, as well as near home, and subjected both to the like treatment after being planted.

It was said above that in France an opinion was held that the silk produced from feeding on the *multicaulis* wanted strength. This is not the only objection there made to this kind of mulberry. It is considered to be short-lived, and that its decline and decay is as much in advance of other kinds, as its early growth and fitness for use. If this be true, it has not been suffered to be discovered, much less reported, in this country; because almost every possessor of the trees has regularly cut them up every year into cuttings to produce young plants, and very few have been permitted to grow even to be five years old. Now whether they would begin to decline so soon as is alleged, or not, if permitted to live, it is certain that few persons in this country have ever seen a plant except under three years old, and of course in a state of greater succulence and more rapid growth than to be expected in after time. This remark would apply to every kind of tree —and in a remarkable degree to the native mulberry, of which the leaves in early growth (even in the forests) are often seen four times as large as is usual on large trees. But all the interested puffers and salesmen of the *morus multicaulis* assume, and their customers seem as readily to admit, that the succulent and large-sized leaves, so remarkable in the early and *forced* growth of the trees of one and two years, are always to distinguish the mature tree. This expectation must be unfounded, judging by all analogous cases; and moreover it is very doubtful whether this feature would be desirable, even if it could be retained. The large size of leaf, so far as caused by, and indicative of, succulence in the plant, and that again caused by excessive supplies of nourishment to the plant, is certainly not desirable for its proper and sole object, that of producing silk. For it has long been known in the silk-growing parts of Europe that the leaves of mulberry trees growing on moist or very rich land, and therefore of rapid and succulent growth, are not as healthy food, and do not furnish as good silk, nor as much profit in the product, as the leaves of trees on poor and on dry land. Thence it may be safely inferred, that if the forced growth of the *multicaulis* in this country had been used to much extent to feed silkworms, instead of to sell to new adventurers, it would have been found to be liable to the objection just stated. But that objection would probably not have been promulgated, as being likely to lessen the greatest value of this kind, which is to be sold at high prices.

The first introduction of this plant from the Philippine Islands, was into France; and its superior advantages in some respects were there seen and generally made known, so as to insure to its culture a favorable consideration, and a fair trial. But though introduced in this country, from France, after it had excited attention and gained much favor in that country, the propagation has spread here so much more rapidly, that there are already ten times the number of plants here that there are in France. The cause of this remarkable difference is plainly enough seen in the different circumstances of the culture in the two countries. In France, the main object in cultivating this tree, was to feed silk-worms. Here, the almost *sole* object, has been to sell the plants, and buds, and to produce as much growth as possible for each year's harvest and sale. Besides, each culturist in France would scrutinize (perhaps too severely) the characters of the new mulberry; while here the interest of the culturists would necessarily direct the concealment of all defects, and the exaggeration of the real advantages. In this way the northern nursery-men have duped their neighbors more to their injury than their southern purchasers; for the plants *will* flourish here, and they *will not* stand the winters of New England, not-

withstanding all the strong assertions of the producers to the contrary. Whatever may be the true and superior advantages of this tree, they will principally redound to the benefit of the southern states.

After the foregoing portion of these remarks was in type, we had opportunities of being better informed on two of the points mentioned above; one of which was doubtful, and the other mistaken, because not tested by observation and experience of sufficient duration. These are, the objections, made in France, to the alleged very early decline of vigor and death of the *morus multicaulis*; and the supposed lessened size of the leaves of trees of matured growth. On the side of F street, Shockoe Hill, Richmond, we have just seen trees of this kind, of which the largest are more than four inches through the body, although, judging by the eye, they are not more than 18 feet high. These were not permitted to grow *many-stalked*, as the name implies, and their nature requires; but being designed for ornament, had been trimmed, and forced to grow *single-stalked*. Though growing well and luxuriantly, and having no certain indications of the use of the knife, the want of height proportioned to the trunk seemed to show that the tops of these trees had been cut down at an early period of their growth. Another tree, in the garden of D. I. Burr, deceased, though not more than 2 to 2½ inches through the body, (this also having been trimmed to a single stem,) stands 22 feet high, as measured by our eye; and it would be 24, or more, if the upper branches were not borne down by the weight of their burden of leaves. The ages of none of these could be then learned; but the oldest are probably fully eight years old; and all appeared as thriving, and as much in a growing state as any other trees of like age, and of kinds that may live for half a century or more. The leaves, also, (to our surprise, and conviction of having made an erroneous anticipation,) were but little if any smaller than the usual size of those on younger trees. These facts alone would serve to remove the fear of a very early decay of vigor, and decline and death of the tree; and decide that the size of leaf does not diminish in the older tree, and on better matured wood, in proportion to that change in the common mulberry, and many other trees.

In addition to our own personal observation, we have just received the following better testimony from G. B. Smith, esq. of Baltimore, in answer to inquiries on these two doubtful points. "My old tree," says Mr. Smith, "was one year old when I got it, in the spring of 1828; and is now, of course, eleven years old. It has been transplanted several times; and the last time when it was eight years old. Of course, it furnishes no criterion of the state of the tree at this age. Several large stalks of mine have perished; and there are now 6 stalks, from 6 to 15 feet high. It has also been every year deprived of its branches, and sometimes of its top-wood, for cuttings. Many of its leaves now measure 15 inches in length, by 13 to 14 inches wide. Its leaves are as large now as ever they were."—"The *morus multicaulis* is a *many-stalk* tree; it is constantly sending up shoots from the crown of the roots, like the filbert and lilac; and, consequently, the older stalks die out; but whether from natural decay, or from being perished by their numerous younger brethren, I do not pretend to say. But that the tree will live eleven years, under very adverse circumstances, I know, from the fact that I now have a tree of that age. All many-stalked trees throw off their old wood occasionally, to make room for the young and more vigorous. But how this fact can be any detriment to the *morus multicaulis*, I cannot comprehend, as the roots send up half a dozen stalks, generally, for every one that decays."

This additional testimony and correction of previous error and doubt, we insert, not only readily but, gladly; for no one will receive with more welcome, or publish with more pleasure, any new, or confirmatory evidence of the valuable qualities of this tree, as offering peculiar facilities and aid to silk-culture.

From the Penny Magazine.

THE AMERICAN MANNER OF MOVING HOUSES.

In England we consider it no trifling affair to remove our household establishments, when circumstances render it necessary for us to do so; whereas our trans-atlantic brethren, the Americans, set about removing their houses (goods and chattels included,) without considering it matter of difficulty or hardship. To be sure, their buildings (I do not include those of their older towns and cities) are less substantial and solid than ours; for a frame of moderate-sized posts and scantlings, lined within and without with thin pine boards, is not quite so ponderous an affair as a building where the walls are of massive stone, nor even as one of bricks and mortar.

Before I proceed to explain the usual plan adopted for removing buildings, I will relate some circumstances connected with a frame building with which I was acquainted, and which constituted a fraction of the capital of the county in which I resided. While the town was but in its infancy, an acquaintance of mine built a "store," (shop for general merchandise, with granaries, &c., overhead,) in which he commenced the business of a general merchant. In a few years the population increased, and the town became much enlarged; and so did the business of my acquaintance, inasmuch that he found, or fancied, his original store too small for him. In this dilemma what was to be done? The difficulty was soon solved; he sold his store, to be taken off the premises, for he wanted the ground to build a larger one upon. A dress-maker was the purchaser, who removed it about eighty yards along the same street, and had it fitted up to suit her line of business; at the same time converting a portion of it into apartments to dwell in. How long she occupied it I do not precisely recollect; but, quitting that part of the country for a few years, when I returned and looked for my old acquaintance, the milliner's store, nothing like it was to be seen. I repaired to the original owner, and inquired if some calamity had befallen it, or if it were still on the move? "I guess," replied he, "that you will find it in Centre Avenue, a little below the Washington Hotel. It is now the property of

Mr. D—, my old clerk, who has converted it into a 'grocery.'" And, to be sure, there it was! and one of the greatest nuisances of the place; for Mr. D—'s grocery was the rendezvous of all the lazy, drunken vagabonds connected with the town and neighborhood. I do not remember how many years it continued the resort of the dissolute; but it was after the temperance societies had made some progress in that part of the country, that happening one day to be in the town, I observed more bustle than ordinary in the vicinity of Mr. D—'s grocery, and upon inquiring what was going on, I learned that the grocery was once more on the move; that it had been purchased by a stanch temperance man, a boot and shoemaker; and that he was removing it into the vicinity of his own dwelling-house; not only into another street, but to a distant part of it; and there I left it when I removed from that district some years afterwards—one part of it occupied by half a dozen cobblers' stalls, and the other part a well-supplied shoe and leather store.

I was once present at the removing of a large grist-mill, containing four pair of mill-stones, besides all the machinery and apparatus necessary for the purpose of carrying on the manufacture of flour for exportation. It was a stout frame-building, of the dimensions of fifty feet by forty, and four stories high. After it had been some time in operation, it was ascertained that in dry seasons the situation did not command a sufficient head of water; but as the stream had a considerable fall, it was obvious that if the mill were placed 100 yards further down, the desired fall would be obtained. To effect this the owner of the mill agreed with an old Yankee to remove it, just as it stood, to its new site, for the sum of one hundred dollars (a little over £20 sterling,) a small sum apparently for such an undertaking; for if the building or machinery sustained any damage, the person undertaking the removal was to make it good. Large frame-buildings, like the one in question, require stout timbers for their posts and beams; the principal timbers in this mill were from twelve to fifteen inches square. Besides the four bottom beams or sills which rested on the stone foundation, there were three others of a similar size mortised into the end ones, and equidistant from each other; so that there were, in fact, five transverse beams on which the lowest floor rested. The first thing to be done was the laying down of wooden ways, upon which the building was to travel upon rollers; to accomplish which, five rails of squared timber, at distances asunder exactly corresponding with the foundation-timbers of the mill, were properly placed and secured, in lines extending to where a new foundation of stone had been already prepared. After this the building was raised perpendicularly, by the means of wedges of hard timber, about eight inches, in order that eight-inch wooden rollers might be placed under the several lower beams and sills; which having been done the wedges were withdrawn, and the building then rested upon the rollers. The rollers were made of hard timber, each about five feet long, and perforated near each end with suitable holes, for the reception of hand-spikes or levers, to be used by the persons employed in the removal of the building. Under each beam were placed four rollers, so that under the whole five beams, twenty were employed. I should have remarked that it was necessary to remove the bottom floor-planking, in order that the persons employed at the rollers placed under the middle or inner beams might be enabled to work them. Two persons were appointed to each roller, one to each end; and every thing having been properly fixed, and all the forty men at their respective posts, the old Yankee captain gave the word "move," when the fabric instantly began to advance on its wooden ways. As soon as the rearmost rollers were set at liberty in the rear of the advancing building, they were straightway carried forward and placed under the extreme forepart of the beams they severally belonged to. It was found that the power of the forty men stationed at the rollers with their handspikes or levers, was amply sufficient to keep the building in motion without any extraordinary exertion being called for; and as there intervened no obstacle in the distance the mill had to travel, in about three hours it had advanced to its destined resting-place. Having safely arrived there, wedges were again employed in order to free the rollers, and to settle it gradually on its new foundation. The whole undertaking was completed without the slightest injury occurring to any part of the building or machinery; not a square of glass was broken or cracked in any of the score of windows that belonged to the various parts of it; not a pin or a nail was sprung or broken.

From the American Farmer.

HYDROPHOBIA IN SHEEP.

Springdale, Va. 18th March, 1823.

DEAR SIR,

The effects of hydrophobia were singularly exhibited a few years since, on a flock of sheep belonging to the plantation of my father, in this county. As the facts were at the time perfectly novel to me, and may still be interesting to others, I have thought them not wholly unworthy of a place in your excellent paper.

In the month of February, 1810, while it was intensely cold, and a very deep snow covered the ground, the flock of sheep were confined in a small enclosure surrounding a fodder house, which served the double purpose of supplying them with food and protecting them from the inclemency of the weather. In this situation they were visited by a dog belonging to one of my neighbors, which, although there had been something rather extraordinary in his appearance and conduct, had evinced no very marked symptoms of hydrophobia. About day-light in the morning he was discovered by the negroes, in pursuit of the sheep in their inclosure; but on seeing them, and being menaced with a stick, he ran off; but instead of going immediately home he took the direction to a neighboring village, where he bit two cows, and disclosed other marks of unusual ferocity and ill-nature. These circumstances at length excited suspicion of the true nature of his malady, and on his return home, he was shot. Upon examining the sheep, it was found that 15 or 20 had been bitten, most of them so slightly, that in one instance, only, was it thought that death would probably ensue, merely from the wounds. The

peculiar manner in which the animals were bitten, and the number injured, showed that the dog was actuated more by a strange and malignant propensity to mischief, than from the mere desire of food. Instead of killing them immediately, he appeared to have attacked them merely for the purpose of teasing them; and the impressions of his teeth were barely visible, on their ears and faces, and not unfrequently on their legs. In every case, however, he succeeded in bringing blood; most of the female sheep were in their last stage of pregnancy, and so trifling was the injury they sustained, that they bore their lambs as usual, without exception; and before the lapse of a fortnight, their wounds were entirely healed. About this period hydrophobia first made its appearance. Two of the flock were found sick, and unable to stand, before they were known to be affected. In a few days the disease was observed in several others, and in this manner three or four in each week, disclosed the symptoms, and six weeks had elapsed before the whole number bitten had been affected.

There was a peculiarity attending the early symptoms, which soon marked the individual destined shortly to become a victim to the dreadful malady. It first attracted attention by pursuing and tormenting its associates, by almost incessant libidinous actions. The diseased were all females, and several with lambs at their sides; yet their venereal inclinations were so powerful, that they exhibited in a most astonishing degree, the manners and actions of the other sex. In this manner did some of them, with persevering industry, tease and torment a companion, for twenty or thirty minutes, until the fugitive would find shelter by mingling with the flock—a second would then be attacked in the same manner, and have to run the same vexatious round; sometimes the fugitive would turn upon its pursuer, and by an effectual resistance obtain relief. This paroxysm would intermit occasionally, and the infected sheep, would feed peaceably with the others, if not disturbed; but upon approaching the flock, it could readily be recognized by its bold countenance, staring or glassy eyes, and an advance to make battle. In this state of the disease they would attack a man with much resolution, and beat him with their heads. In some instances I recollect seeing them advance from fifty to one hundred yards, from the flock, and attack persons so furiously, that they were obliged to defend themselves with sticks. After discovering more than common strength and vigor for a short time, an instantaneous debility appeared to come on, and their limbs refused to do their office. I have seen them, in the very act of advancing vigorously to battle, fall as suddenly, as if shot by a ball from a gun. In a few minutes their strength would return, and they would rise again to renew the combat. This I think might generally have been considered the second stage of the disease; yet in this situation their amorous propensities continued, for I have seen them fall, while pursuing other sheep of the flock. These paroxysms, or falling fits, at last became more and more frequent—the animal refused to take food, and became too feeble to follow the flock. But even in this state of excessive debility, and while apparently suffering the most excruciating pain, the inclinations which predominated throughout the disease would still manifest themselves, until a complete exhaustion would terminate the struggle. The lambs which had continued to suck during the lives of their dams, were now fed by hand, and if I recollect aright were without an exception raised. The wool was invariably saved after the death of the sheep, without any inconvenience whatever; indeed, as a proof that the blood of the infected animal cannot be injurious, unless commingled with that flowing in the veins of the living; the skins were taken from several hogs, which died of hydrophobia, the same time, and the bodies frequently eaten by the others, with entire impunity. It was a remarkable circumstance, that with the infected animals, putrefaction ensued almost immediately after death.

Very respectfully,

WILLIAM M. BARTON.

For the Farmers' Register.

WOLVES IN FAUQUIER.

Fauquier Springs, Aug. 22, 1838.

While viewing, from an eminence at the extremity of Warrenton, the extensive and beautiful prospect of fertile valley and mountain lands stretching to the Blue Ridge, Mr. ——— directed my attention to the Leathercoat mountain, which is in full view, about eight miles distant in a direct line. There was, near to, but below its summit, the appearance of a line of white huts, or some other kind of artificial structures of humble size, spread over a considerable extent of ground. He explained, however, that they were naked rocks—of which it is rare to see much of any of the mountain sides in Virginia composed, and still more rare of the fertile South-West Mountains, to which range this one belongs. I was much surprised to learn, that among these rocks, and in the dens which they formed, there were wolves still sheltered, which had been residents of the Leathercoat, and the adjoining Bull-run mountain, for the four last years. No wolves had been heard of before, during the lives of any of the present inhabitants of Fauquier, nearer than the rarely visited and scarcely accessible rocky cliffs and precipices of the Alleghany mountains, perhaps one hundred miles distant; and it is a strange and unaccountable circumstance, that this colony should have been settled so recently, so far to the eastward. The stealthy and hidden manner of their emigration is as remarkable, as the motive for it is inscrutable. The hungry band of prowlers must have passed over, in their journey, a very wide extent of fertile valleys, filled with flocks and herds, and also of higher mountains, furnishing as good places for concealment, before reaching their chosen fastness and abode, from which they have not since been driven. For a long time the actual presence of these cunning and ferocious depredators was not suspected by the people of the neighborhood, though they were killing their sheep by hundreds. The losses were ascribed to dogs; though such extensive and long-continued destruction, without discovery of the particular actors, had never been heard of previously. Before the midnight and bloody forays of the wolves were effectually checked, they had been extended as far as twenty miles from their

mountain strong-hold; and they had killed, in all, more than 1000 sheep in this county. As soon, however, as the nature and the abode of the enemy were known, large hunting parties of hundreds of the neighbors, with guns and with all their dogs, scoured the mountain and its places of concealment. They formed a circle around the mountain, as practised in Europe in ancient times, for the sport of royal huntsmen; and gradually closed their ranks, and lessened the surrounded space, by advancing slowly and regularly up toward the central point of the mountain, and driving the roused and encircled wolves before them. Besides the rocks, and the usual difficult ground of steep and rocky mountain sides, there is much of the mountain covered with that strong and large evergreen shrub, or small tree, the laurel, improperly called the ivy-bush, which spreads in many cases over acres of the land together, and forming, as it always does, the most dense and impenetrable thicket. The stoutest dogs, and in numbers, were scarcely able to cope with their new and fierce enemies; and many, in attacking them, perished by the long and sharp fangs of the wolves, when driven to desperate bay. When the wolves could be seen and reached, these conflicts were usually speedily ended, by the rifles of the hunters. In different hunts of this kind, 24 wolves were killed, without all being destroyed, or the diminished remnant being induced to abandon their chosen place of refuge. However, being intimidated by the attacks on them, and their heavy losses, they have made no incursions into the neighboring farms, and committed no known depredations on the flocks, for the last two years. But some still retain their position, in spite of all the force and craft of the hunters, as resolutely and as obstinately as the Seminole Indians have done against the arms and diplomacy of General Jesup. A sufficient evidence of the still-continued presence of the wolves in these mountains, is, that a man has during this year found and killed, in their dens, eight wolf-whelps. E. R.

From the Quarterly Journal of Agriculture.

PRACTICAL EFFECTS OF DRAINING.

The system of draining introduced into Scotland some years ago, and proceeding so rapidly, must be regarded as the greatest improvement of modern times. The landlord and farmer do it jointly. Here is a safe investment for money—the expense repaid in twenty years, regular interest, and the land improved in value above one-third. Green crops are grown in great abundance after draining, where no attempt could be made before, and the farmers allow they have four crops in three years, and the draining pays on an average eight per cent. I know an instance of a wet clay soil, almost covered with rushes, being drained and improved at an expense of £15 an acre, ($65); the green crops were so productive as to repay the expense in one year, and after deducting the old rent, the improvement pays fourteen per cent. upon the outlay. The drains are from 20 to 30 inches deep, and at the distance of from 12 to 20 feet, sometimes in the furrows of the field, or across, or obliquely, as the descent may suit, and sometimes the land is laid flat. Draining, to be remunerative, must be done effectually. A field cannot be drained by putting a drain in a corner, one here and another there; by running one across the field, and another diagonally to that. It must be done completely, or not at all, for half measures are useless.

From the Franklin Farmer.

SELECTION OF SEED WHEAT.

Richmond, Ky., Aug. 6, 1838.

Many years ago, a farmer in this quarter, who cultivated the same variety of wheat and in the same manner as did his neighbors, was known to have a yield of a third more to the acre. Upon inquiry as to the cause, the unsatisfactory answer was given—"I sow barrel seed." The neighbors purchased of him their seed wheat, and the first year had a yield equal to his; but selecting their seed as formerly, the second and third crops were but little, if any better, than was raised by them previous to their purchase of seed. They again purchased, and their fourth crop was equal to the first, but their fifth and sixth crops were like their second and third. How to solve this apparent mystery, caused many a neighborhood consultation and discussion. The vender of the seed saw too inviting a prospect to make money from the sale of seed wheat to induce him to disclose the manner of its preparation, and he struggled to keep it concealed. It was ultimately discovered, however, and was as follows:

When you are ready to get out your wheat, place a barrel or box in your stack-yard, open at one end; before you pass the bundle to the treading floor, give it one or two strokes across the open end of the barrel or box, by which the best matured grains will shatter off; then winnow and use for seed.

Thus selected, it will be far superior to the seed prepared by running it through a coarse sieve; for it is known to every observant farmer, that many of the largest grains of both wheat and rye are unripe or diseased, and yet they do not shatter out as easily as those which are perfectly ripe.

W. C. G.

From the New England Farmer.

CURING CLOVER HAY.

There prevails with many farmers a strong prejudice against clover hay; and indeed in the condition in which it usually is found it is a very coarse miserable fodder, and hardly better than so much brush. Our northern clover sown on richly-manured land, and with the small quantity of seed commonly applied, makes a rough product; and, as the flowers and seeds are generally shaken off in the making, it contains little nutriment, and is scarcely fit for other purposes than litter. The southern clover is of a smaller growth; and on that account makes a much better forage. Indeed, clover hay, when well cured, is very much liked by cattle, whom we must allow to be pretty fair judges in the case of what is good for them; and no long feed, that can be given to cows, will make more or better milk. One of the best milk-men in the neighborhood of Boston speaks of it in the highest terms; and, in his mode of curing prefers

it to any other hay. Clover, when mixed with other hay in market, for the reason only we believe that horses taken in at livery stables, will eat more of it than of the herds-grass, cut after it is dead ripe, and so coarse and hard that the mastication of even a small quantity is likely to employ all the time the poor tired horse has to spare from his sleep; and a rack full of it, like the show pickles and pound cake at taverns, is liable to stand by for some time and to serve many a guest. We consider clover-hay, when well saved, as some of the best hay which can be grown; highly palatable, and containing an abundant nutriment; but its value greatly depends on the mode of curing.

Some farmers have cut it in the morning, and after a warm day have carried it in the afternoon of the same day, and by a very liberal salting have saved it well. But the practice of other farmers is, we believe, a much preferable mode. We know several cases in which it has proved entirely satisfactory; and we shall proceed to describe it.—They eat it in good weather, and when it is dry. They scarcely spread or stir it at all. At night of the day on which it is cut, they put it into cocks of a good size, and there let it remain two or three days rain or shine. When well made in this way, which is easily determined by a practised hand, on a pleasant day in the morning they turn over the cocks and open them slightly, and then carry it in, giving it a very little sprinkling of salt. One great object is to avoid by much stirring the shaking off of the heads. Thus cured they regard it among the most valuable hay which they get. We have known the same plan pursued by one of the best farmers in western New York with all his hay crop. The Deerfield farmers of late years dry their hay in the sun much less than formerly, and they believe to their great benefit. In all cases however the most scrupulous care must be observed to rid the hay from all wetness of dew or rain.

From the Baltimore Farmer.

RECIPE FOR TAKING HIVES WITHOUT DESTROYING THE BEES.

Having always thought that there was great inhumanity in the old plan of *destroying* the bees, in order to take the honey, we determined to try the more humane plan practised by the French of robbing them of their sweets without depriving them of life, and we have put the plan twice into operation the present season with entire success. And as, besides the humanity of the process, it has economy to recommend it, we deem it our duty to lay the method before our readers, in the hope that we may be instrumental in saving many lives of those industrious workmen, and of securing their labors to their owners for numbers of years. The method, which is easy, is as follows:

In the dusk of the evening, when the bees are quietly lodged, place a tub near the hive, then turn the hive over with its bottom upwards into the tub, cover the hive with a clean one, which must be previously prepared by washing its inside with salt and water, and rubbing it with hickory leaves, thyme, or some other aromatic leaves or herbs. Having carefully adjusted the mouth of each hive to the other, so that no aperture remains between them take a small stick and gently beat round the sides of the full hive for about 15 minutes, in which time the bees will leave their cells in the lower hive, ascend and adhere to the upper one. Then gently lift the new hive with all its little tenants, and place it on the stand from which the other hive was taken.

This should be done about midsummer, so as to allow the bees time to provide a new stock of honey for winter's use. If care be observed no danger need be apprehended.

From the Buckeye Ploughboy.

THE FARMER.

No avocation in life is more respectable and useful than that of the farmer. The time has gone by when "contempt is cast upon the husbandman." Agriculture, as a science, is becoming more important, and more honorable. It is the noblest, for it is "the natural employment of man." The intelligent and independent farmer is ever respected; he holds an important and responsible place in society. Upon him devolve many duties; upon him rest many obligations. In him we look for examples in patriotism, virtue and intelligence. Living, not in the "hum of human cities;" where he would be continually in the whirlpool of political and other excitement, he can examine questions of a moral, religious and political nature, with a cool head, a calm mind, and an unbiassed judgment. To him we look for correct opinion, and in him we should ever find a safe counsellor, and a correct adviser.

Our farmers should cultivate their minds and their hearts, as well as their fields. They can gain as rich rewards in the mental, as they can reap profitable harvests in the natural world. Without learning a man cannot be a first rate farmer. Without intelligence he cannot discharge in proper manner, the duties of a citizen. Agriculture is a science that requires experience and study. Men must be educated to be farmers, as well as to be lawyers, or doctors. And there are thousands of young men who are in stores and offices, who should go into agricultural pursuits. It would be better for them, better for the country. And who would not rather be an independent farmer, than a small shopkeeper, or a fourth rate lawyer or doctor? Who would not rather be first in a useful employment, than to be titman in one which the world calls honorable? Let young men seek for land, rather than for situations, "in the cotton trade and sugar-line."

From the Genesee Farmer.

SWAMPS.

Swamps are generally considered the most worthless and unprofitable part of a farm, when, in nine cases out of ten, if they were properly treated by draining, trenching, and being freed from bogs and bushes, they might be converted into the most valuable and productive soil. What are termed swamps are usually low lands, receiving the water and the wash of the neighboring hills, and of course must be composed of the rich-

est materials, and those best adapted to promote vegetation. The first object in reclaiming such places, and without which all other efforts will be unavailing, is to free them from the surplus water. To do this effectually reference must be had to the extent of the swamp, the quantity of water to be thrown off, the declination of the surface, the natural outlets of the water, and the work of draining commenced on a scale commensurate with the end to be effected. If the quantity of water to be discharged is large, or if the swamp is liable to inundations, the main drain should be open, and of a size sufficiently large and deep to allow the water to flow off freely and quickly. This, as the main work, should be performed in the first place, as it will greatly facilitate the determining of the best place for side-drains, and aid in their formation. If the water of the swamp is furnished by springs around the margin, a drain of a proper depth and capacity should be run around the outside, and connected with the main drain, and if springs rise in the level part, particular reference must always be had to these places in any plan of draining. Unless the quantity of water to be carried off is very large, all the drains except the main one may be covered, and of course will form no obstruction to cultivation.

When, by draining, the surface is once dried, the operation of freeing the surface from bushes, bogs, and coarse grasses, can be carried on at pleasure. When the ground is firm enough for the use of the plough, the surface may be turned carefully over, and the cultivated grasses, clover, herds-grass, red-top, &c. sown with oats or other spring grain, to form a new and fine turf for mowing or grazing. Where the plough cannot be used at first, the bushes and bogs can be extirpated with the hoe and grubber, and the cultivated grasses sown in their stead. Potatoes are an excellent crop for reclaimed grounds, rendering the surface fine, and putting it in good condition for seeding. Swamps so reclaimed make the most valuable meadows. There is another point of view in which the great mass of vegetable mould collected in swamps possesses a great interest for the farmer. We have, in former numbers of the Farmer, stated the great care and expense incurred in the European countries, in securing the largest possible quantity of manure, by mixing with the dung of their cattle, in their stables and farm-yards, all the refuse straw, weeds, leaves, washings of the highways, and all other vegetable and animal matter that could be collected, that the whole might be used in enriching the soil and increasing the crops. As a deposit in the farm-yard, nothing is found to exceed in value a covering of earth from a swamp. The custom in Belgium and Germany, where such a resource is available, is, when the yard is cleaned of manure to cover it with fresh vegetable mould or swamp earth, to the depth of a foot. This earth absorbs the urine, the wash of the yard, the salts of the manure, that would otherwise flow off and be lost, and in the course of the season, or the year, becomes the most valuable and efficient of manures. No farmer who understands his true interests, will suffer the wash of his stables and yards to be lost, and there is no way in which it is so effectually prevented, as by furnishing vegetable mould to absorb it.

With some farmers in this country who have adopted this mode of replenishing their cattle-yards, the rule is to return to the yard a load of swamp mud for every load of manure taken from it to the field. As a top-dressing for meadows or grass lands, this earth, impregnated with salts, is unrivalled for promoting fertility. Like all finely-rotted manures, its effects are more prompt and energetic than those of common manures, but the influence is not perhaps as durable. Instead, therefore, of considering a swamp as a useless piece of ground, the farmer should look upon it as a great magazine of vegetable mould; capable, if desired, of being converted into the best of manures; or if not required for this purpose, can be made where it is, to produce the best of grasses, and make the most productive of meadow-lands.

From the Genesee Farmer.

CATTLE—DEVONSHIRE.

While it may be affirmed with great truth, that the present beautiful and superior breed of improved short horns are strictly artificial, and while some fears may be justly entertained lest the valuable qualities for which they are so distinguished, have not become so fully constitutional as to be beyond the possibility of lapse,—we here bring to the notice of the farmer, a breed of cattle, scarcely inferior in quality to the short horns, and of which no apprehensions can be entertained that the type of these distinguishing qualities are evanescent, and not durably incorporated in the constitution and race.

The north of Devon has long been celebrated for a beautiful breed of cattle, in activity of work, and aptitude to fatten unrivalled. The place where they are found in the greatest perfection, is in the vicinity of Portlock and Biddleford, along the Bristol channel in the county of Devon. From the earliest records the breed has here remained the same, or if not quite as perfect in general as at the present moment, yet altered in no essential point until the last thirty years. No persevering successful attempts to improve the general character of British cattle were made until within some fifty or sixty years; and the Devonshire farmers were so well satisfied with their herds that they were about the last to dream that their beautiful red cattle could be improved, and they did not bestir themselves in earnest until the high prices and improved forms of the Collings short horns, convinced them that in estimating their advantages they were behind the age.

The most perfect specimens of the Devonshire cattle are found among the North Devons, and it is of these we shall speak. As the breed is of the middle horns the horns should be neither too high or too low, those of the *bull* tapering to the points, not very thick at the base, and of a yellow or waxen color. The eye should be clear, bright and prominent, showing much of the white, and ought to have a circle of a variable color, but usually of a dark orange around it. The forehead should be flat, indented and small, for by the smallness of the forehead the purity of the blood is much estimated. The cheek should be small and the muzzle fine, and the nose should be of a clear yellow. The *ox* has a small head, singularly so relatively to the bulk

of the animal, yet it has a striking breadth of forehead. Its neck is well adapted to the yoke or the collar; the horns are small and fine; the forelegs are wide apart, looking like pillars to support a great weight. Angular bony projections are never found in a beast that carries much flesh and fat. A narrow-chested animal can never be useful either for working or grazing.

The skin of the Devon of the pure breed, notwithstanding his curly hair, is very mellow, fine and elastic. Graziers know there is not a more important point than this. When the skin can be easily raised from the hips it shows that there is room to set fat below. The favorite color of the Devons is a blood red. The hair in some is curled, the curls running like ripples on water, and when dark giving a mahogany appearance. If the hair is smooth it should be fine and glossy. Few of good blood have any white upon them, and the pure Devon is as uniformly red, as is the pure short horn red and white.

The comparative smallness of the Devon cow, is one of the most remarkable traits of their character. The bull is much smaller than the ox, and the cow proportionally smaller than either. This is considered somewhat of a disadvantage, as it is almost impossible to procure large and serviceable oxen, except from a *roomy* cow. Owing to their peculiar build, however, the Devon cow is more *roomy* than most other breeds of cattle of the same size, which in a great measure obviates the objection. The Devon cow is particularly distinguished for her full, round, clear eye, the gold colored circle around it, and the same color prevailing on the inside of the ear. The muzzle orange or yellow, but the rest of the face having nothing of black, or even of white about it.

The peculiar excellence of the Devonshire ox, is a quickness of action in working, which few horses exceed, and no other cattle can equal. They have also a degree of docility and goodness of temper, and stoutness and honesty of work, to which many teams of horses cannot pretend. Mr. Youatt, who is great authority on the subject of cattle, thus describes their usual mode of treatment and aptitude to fatten.

The Devon steer is taken into work at about two years old; and they work until they are four to six; they are then grazed, or kept on hay, and in ten or twelve months, and without any further trouble, they are fit for market. If the grass is good, no corn, or cake, or turnips are required for the first winter; but of course for a second winter, these must be added. The grazier likes this breed best, at five years old, and they will usually, when taken from the plough, fetch as much money as at six. Lord Somerville states, that after having been worked lightly on hill land for two years, at four years old they are brought into heavy land of the vales, and used in hard work till six; and what deserves consideration is, an ox must be thus worked to attain his largest size. If he is kept idle until he is five or six, he will invariably be stinted in his growth. Mr. Youatt adds—In their disposition to fatten, very few cattle can rival them. They do not, indeed, attain the great weight of some breeds; but in a given time acquire more flesh, and with a less consumption of food, and their flesh is beautiful in its kind. It is of that mottled, marble character so pleasing to the eye, and to the taste.

As to the value of the Devon cow for the dairy, different and somewhat conflicting opinions are entertained in England. Mr. Youatt says:

"For the dairy, the north Devon must be acknowledged to be inferior to several other breeds. The milk is good, and yields more than an average proportion of cream and butter; but it is deficient in quantity. There are those, however, and no mean judges, who deny this, and select the north Devons even for the dairy."

Perhaps one of the most valuable crosses that has yet been made, is the one described by the celebrated breeder, Mr. Bolton, in a letter to the Farmer's Magazine.

"I have known many excellent beasts bred from improved short horn bulls and long horn cows; indeed I never knew one of these bulls put to any cow where the produce was not superior to the dam, but the cross which I advocate, and with which I am best acquainted, is that with the *Devon cow*. I have uniformly remarked that a cross here was attended with a proportionate improvement in size, quality of flesh, and aptitude to fatten. In every instance they have shown themselves superior milkers, and stand to the pail till within six or eight weeks of calving; and several instances have come under my knowledge, where they have never been dry since they first calved. So highly are they prized as milkers, that a friend of mine who hires out dairies informs me that the dairymen give him nearly £2 per cow per year more for the half and three-fourth breeds, than they would for cows of any other breed."

Judging from the expressions of opinions given by cattle breeders in England, by the course of the agricultural periodicals of that country, and by the fact, that at the late Smithland cattle show open to the whole kingdom, the first prizes were taken by Devon cattle, we should imagine that since the demise of some of the most celebrated short horn breeders, such as Collings, Berry, and others, the Devons were treading close on the heels of the short horns in public estimation. The first premium was given at the late Smithfield fair, to a pure Devon, the property of Mr. Coke of Holkham, and the second to a steer only 19 months old, of the improved Devon, or the Devon crossed with the Somersetshire breed. The ox weighed when dead, 1,122 pounds; and the steer when dead, weighed 1,382 pounds. The steer was a most remarkable one, and was owned by Mr. Giblett.

The Devonshire breed of cattle have been more extensively introduced into the United States than any other breed of foreign cattle, and they form a large portion, in different grades, of the cattle of New England and the middle states. Some fine stock of this breed were sent from Mr. Coke to Mr. Patterson of Baltimore, and two oxen from this importation, raised and fattened by the Messrs. Hurlbut of Winchester, Connecticut, weighed when killed as follows:

First Ox,		*Second Ox,*	
Carcass	1438	Carcass	1528
Hide	117	Hide	115
Tallow	175	Tallow	213
	1730 lbs.		1856 lbs.

Mr. Fisher of New York, addressed a letter to Mr. Coke, giving an account of these cattle, and received the following reply from that veteran ag-

riculturist, which we insert as showing his opinion of the Devons.

Holkham, April 21, 1831.

Sir—I am this moment favored with your kind letter, and most flattering account of the Devon oxen. It is a pleasing reflection to me, that I was the first person that introduced them into America, through my friend Mr. Patterson. I thought them at that time, and I am still more confirmed in my opinion now, that they are the most superior breed of cattle in the Island, if well selected. But I beg to be understood, when I speak of the Devonshire red cattle, it is in praise of the *North Devon cattle*, with yellow noses and indented foreheads, and yellow around their eyes, which mark their character beyond that of the South Devons, which have black noses, or intermixed with black. These I beg to be distinctly understood not to recommend as a superior breed of cattle. Be so kind as to express my acknowledgments to Mr. Hurlbut, when you see him, and to assure him that I shall be at all times most happy to show him, or any of his American friends should they come to England, every attention in my power, in the agricultural line.

THO. WM. COKE.

From the Essex Gazette.

STEAM POWER.

The invention of the steam engine, and the various ways in which this philosophical and mechanical power is brought to perform the labor of men and other animals, is among the most curious and interesting subjects to which we can possibly turn our attention. Steam has already made a greater change in the pursuits of man, in the mode of travelling, and the easing of labor, than any other discovery or invention in all the history of past time, and is doubtless destined to a much more extended use; indeed, it is highly probable, that the time is not far distant, when steam engines of all dimensions and powers, will be in common use to perform domestic labor. The same fire which warms the mechanic's shop, will set his saw, his plane and his auger in motion; and we have no doubt but that the present generation will witness steam engines, perhaps not much larger than cooking stoves, driving washing machines, sawing wood, and performing many of the more laborious services of domestic life.

But it was not our purpose, in this article, merely to speculate on possibilities; but rather to state a few facts as to the power of steam and of coal expended in the generation of steam.

By a set of accurate experiments made in 1835, at the copper mine of St. Austel, in Cornwall, it was made to appear that one bushel of coal, weighing 84 lbs. consumed in the best constructed engine, exerted a force equal to raising 125,500,000 pounds one foot high, or equal to raising 1,255,000 pounds one hundred feet high; and every pound of coal exerted a power equal to raising 667 tons one foot, or more than 6 1-2 tons one hundred feet! Each ounce of coal was found to exert a power equal to raising 42 tons one foot, or 18 pounds to the height of a mile!

The largest pyramid of Egypt weighs, by calculation, 12,760,000,000 pounds, and employed 100,000 men twenty years in building it; but the whole required to elevate the stones to their present situation could be produced by the combustion of 479 tons of coal.

The Menai bridge is about 500 feet long, a single arch suspended on chains 120 feet from the water, and weighs 4,000,000 pounds; and the whole could be lifted from the water to its present situation, by the burning of 4 bushels of coal!

The burning of an ounce of coal being sufficient to elevate 18 pounds 1 mile, it requiring but 18 pounds' draught to draw two tons on a level railroad, it follows that the combustion of an ounce of coal is sufficient to draw two tons a mile, on such a road.

From these data, without any allowance for future improvements, it is easy to perceive that the principle is capable of endless diversification, and application to almost all the labors of life, and that whenever those improvements in manufactures are made, which shall afford small machines at a reduced price, they will become as common as turning lathes or grindstones.

There can be no doubt that whenever a permanent power is wanted for any laborious employment, steam is vastly cheaper than it is to employ either men or horses; and the only reason why it is not even more profitable than it is, on railroads, is, that engines of an expense and power are used, vastly beyond the labor they have to perform, and if any engine were so placed as to find employment equal to its capacity for labor, it could do that labor for half, and perhaps for a quarter of the expense of horse power; hence the utility of *extending* railroads, and bringing on new lines of travel, as almost every road in this country is furnished with steam power equal to double the amount of labor they can find to do.

ON FEEDING WET LEAVES TO SILK-WORMS.

Mr. George Fitch, of Bridgton, made an experiment last season, on feeding silk-worms on wet leaves. A few days after they were hatched he divided the worms into two lots; one lot was fed on dry or wet leaves as they happened to be, according to the weather; and when leaves were dirty they were washed and given to the worms; this lot grew faster, and became larger, and spun a week sooner than those fed on dry leaves. It required forty threads, before doubled, from the cocoons of those fed on dry leaves, to make a thread of sewing silk of rather a large size; it took eighty threads of those fed on wet leaves to make a thread about the same size. The cocoons from wet leaves were the largest and heaviest; some of them had threads 800 yards in length. The length of the threads from the cocoons of the silk-worms fed on dry leaves was not measured.

We publish these particulars, as it has been considered necessary to have dry leaves for silk-worms, and it has been recommended to pick leaves before a storm, in order to have a supply of dry leaves on hand. A few years ago, there seemed to be, according to writers on the subject, a great deal of difficulty in managing silk-worms and manufacturing silk. Close rooms, with stoves and thermometers to regulate the temperature, and

dry leaves were considered indispensable; and several years' practice, with good and *costly* instruction, and an expensive reel, in order to prepare the silk for sale in a raw state. Now, silk worms are kept in barns or sheds, without any artificial heat, and they suffer no more from cold than they do from heat. So much nicety as has been practised in regard to their feed is not necessary.—*Yankee Farmer.*

MILK FROM COWS FED ON DISTILLERY SWILL.

[An animated discussion is now going on in the 'Journal of Commerce' of New York, as to the quality of the milk which forms the principal part of the supply of that city. We copy below one of the articles of the assailants. The "Committee of Milkmen" who have answered at great length to previous pieces, present but a very unsatisfactory defence, and a very poor recommendation of the commodity in which they deal.—ED. FAR. REG.]

From the Journal of Commerce.

MILK.

The Journal cannot confer a greater blessing on this community than by producing a thorough reformation in the milk department. It is a subject in which the health and lives of thousands are involved. I have given some attention to it from the circumstance of having the constitution of a fine boy, the delicacy of whose mother compelled her to nurse from the bottle, entirely undermined, and scarred with blotches to this day; while my other children, nursed at the breast, enjoy perfect health. Uncertain of the cause of my boy's pining and drooping, it at length occurred to me to analyze the milk, which I found to be the mere dregs of a distillery; scarce one particle of nutriment to a pint. I found a pint of warm water, a teaspoon full of flour, and 2 grains of magnesia, to contain more nutriment than a pint of swill, called milk. On discovering this great secret in the milk trade, I immediately sent to Orange county and provided a young, healthy, and country-fed cow, which I have had for four years, furnishing abundance of good and wholesome milk.

It has often occurred to me as surprising, that while we have municipal laws to regulate the quality of bread stuff, the corporation should be perfectly reckless of what we administer to the delicate stomachs of our children. There is not a more sure and certain poison than this swill milk. Besides its deleterious properties, a pint does not contain sufficient nutriment to support a child. Did you ever make an estimate of the profits of the milkmen? If not, I will do it for you; having had occasion to investigate the matter. It is based upon feeding the cows on swill merely, from the distillery, which barely keeps the cows alive. The swill is given them warm, and passes through them with the same rapidity as through the stills, and is all converted into what is called milk. They are milked three times each day, and furnish at each milking from 8 to 10 quarts.

One barrel of swill costs 6¼ cents, and will keep two cows a day, which will yield on the average 24 quarts of milk. This, at 6*d*. per quart, is 1 50 cts. Every cow fed on swill yields a net profit to the milkman, over expenses of delivery, &c., of $1 25 per head *per day*. There is no branch of business so profitable, and none so baneful to a community of children. For myself, I would sooner pay 2*s*. a quart for milk from grass-fed cows, than take the swill at any rate.

Yours, V.

A gentleman who was formerly a distiller mentioned to us yesterday, that it was then his custom to feed cows on the slops, and that the quantity of milk, when he put them on that feed, was immediately just about doubled, but the quality ruined. He says such milk will not make butter at all. Churning only wrought it into froth.—*Eds. Jour. Commerce.*

From the American Silk Grower.

SILK CULTURE.

From information coming to us from various sources, we are inclined to believe that a disposition to try the experiment of the cultivation of silk has received a new impetus, and is prevailing in various parts of the country, with a power from which great results may be expected. The demand for the morus multicaulis, and other valuable kinds of the mulberry, has been unprecedented. The importance of the interest begins strongly to arrest the attention; and the actual importance, in our firm persuasion, is not likely to be over-rated.

The great cause of discouragement has been the destruction of the mulberry trees, by the severity of the winter. Not only has the morus multicaulis suffered greatly, but likewise the common white mulberry; so that by the unprecedented severity of the two last winters many of the standard trees in Mansfield, Conn. of many years' growth, have perished.

An experiment, however, has been made, which, by an improved mode, (for so it must be called,) of managing the plants, avoids the danger of the winter, and obtains an early return.

The land is laid out in furrows four feet apart. In these the plants, the morus multicaulis, are laid, the roots three feet apart, the roots being covered, and the branches fastened down and covered slightly with mould until they start. After this the covering is to be increased; and throwing up shoots from every bud, they form a hedge, the leaves of which may be used as soon as grown, for the feeding of the worms. In the autumn the shoots, which will then have formed trees, are to be separated by a spade or some sharp instrument, and taken up and deposited securely from the frost. The main roots, after all the shoots are cut from them, are to remain in the ground; and to be covered by turning a furrow upon them each way. These remain for a permanent plantation. The small plants which are taken up, and the shoots which are cut from the main root, may be used for forming a new plantation the ensuing season, and so on year after year. As to the trouble of taking up the plants annually and resetting them in the spring, it is not to be complained of compared with the advantages which such management promises; and is, in a great measure, compensated by the facility with which the foliage is

gathered from a low hedge, compared with the labor of collecting it from high standard trees. As the foliage for the feeds of the worms will not be so early in this way as from standard trees, it will be necessary to delay the hatching of the worms. This may easily be done by keeping the eggs in an ice-house.

From the Genesee Farmer.

GEOLOGY AND GEOGRAPHY OF NEW YORK.*

The last number of Prof. Silliman's Journal, contains an interesting account of an exploration of the region around the source of the Hudson river, and a barometrical admeasurement of the principal peaks that constitute the nucleus of that elevated range, furnished for that work by W. C. Redfield, of New York, one of the exploring party, and thence copied into the Family Magazine, a valuable miscellaneous work conducted by that gentleman on somewhat the plan of the Penny Magazine, and which deserves an extensive circulation.

It is a fact no less surprising than true, that a range or rather cluster of mountains, by far the highest and most remarkable in the state, and, with a single exception, more elevated than any others east of the Rocky Mountains, should have remained for one or two hundred years, within thirty or forty miles of one of the greatest thoroughfares on the continent, without a suspicion of their great elevation, or scarcely a knowledge of their existence. The Cattskills had long been considered the highest range in the state; but it was now discovered that a part of the upper course of the principal northern branch of the Hudson was higher than the highest peak of that range, and that the source was no less then 900 feet above the Round Top. This is one of the results of the geological survey of the state—which, in addition to the great advantages to be expected from that investigation, promises to add much to our geographical knowledge, and correct many errors into which we have fallen with regard to our own territory.

The sources of the Hudson are spread over the southern part of the wild and unknown region that occupies that part of the state embraced between the settlements on the Black River, St. Lawrence, Lake Champlain and the upper Mohawk. Several thousand square miles are here nearly destitute of any settlements, without roads, covered with dense evergreen forests, abounding in lakes, and filled with animals that delight in the unbroken solitudes of nature. From Port Henry, on Lake Champlain, an apology for a road has been opened in a west direction across this region to the Black River settlements. This road crosses the main northern branch of the Hudson, about 40 miles from the lake and a few miles below the new settlement of McIntyre, which has been created by the owners of the immense ore-beds that there cross the Hudson River, and furnish a supply for the iron works in operation and erecting at that place; and it was to this place that the course of the exploring party was first directed.

The first visit was made in 1836. The party consisted of Archibald McIntyre, Judge McMartin, David Henderson, David C. Colden, Mr. Hall, state geologist, and Mr. Redfield. Thirteen miles from the lake they crossed Schroon River, the east branch of the Hudson; nine miles from Schroon they found a Mr. Johnson on the outlet of a mountain lake, called Clear Pond, the only dwelling on the road from Schroon to the Black River. Eight miles from Johnson's they crossed the Boreas River, and some eight or nine miles farther they reached the Hudson, about 8 miles below the Ironworks of McIntyre. These are situated immediately at the base of the cluster of mountains that divided the Hudson from the Au Sable.

The party immediately entered on the exploration of these wild fastnesses, which apparently had never been trodden by human foot; but the unexpected difficulties of the country, and the limited supply of provisions compelled the party to desist, after they had ascertained that the geography, natural and physical, of the district, was deserving a fuller investigation, and that the geology of that section of the state was of a most interesting character. At a later period of the year Prof. Emmons passed through that magnificent defile, the Notch, to the north of McIntyre, and measured the height of that stupendous precipice, the Wall Face Mountain, forming the west side of the defile. Nothing could equal the dreary and savage character of the country traversed by the party; and the following extracts will show the animals that range over it unmolested. "Traces of wolves and deer were frequently seen, and we discovered also the recent tracks of a moose, *Cervus Alces, L.* We also noticed, at the inlet of Lake Sandford, the fresh and yet undried footsteps of a panther, which apparently had just crossed the inlet." * * * * "Previous to reaching the outlet of Lake Colden, we had noticed on the margin of the river, fresh tracks of the wolf and also of the deer, both apparently made at the fullest speed, and on turning a point we came upon the warm and mangled remains of a fine deer, which had fallen a sacrifice to the wolves; the latter having been driven from their savage repast by our unwelcome approach. There appeared to have been two of the aggressive party, one of which, by lying in wait, had probably intercepted the deer in his course to the lake, and they had nearly devoured their victim in a very short space of time."

The second tour of exploration took place in August, 1837, and the party consisted of Messrs. McIntyre, Henderson, Hall, (state geologist,) Professors Torrey and Emmons, Messrs. Ingham, Strong, Miller, Emmons, Jr., and Mr. Redfield. They commenced their march from the settlement of McIntyre, on the 3d of August, and after a most fatiguing route reached the source of the Hudson, on the morning of the 5th. Mr. Redfield in his narrative, says, "At 8,40 A. M. we reached the head of the stream on the summit of this elevated pass, which here forms a beautiful and open mountain meadow, with ridges of the two adjacent mountains rising at easy slopes from its sides. From this same meadow which lies within the present limits of the town of Keene, the main branch of the Hudson, and a fork of the east branch of the Au Sable commence their descending course in opposite directions, for different and far distant

*This article was written in March. It having been mislaid is the cause of its late appearance.

points of the Atlantic Ocean. The elevation of this spot proves by our observations to be more than 4,700 feet above tide-water being more than 900 feet above the highest point of the Cattskill mountains, which have so long been considered the highest in the state. The course of the Au Sable to Lake Champlain, does not exceed 40 miles, yet its descent is 4,610 feet! This, according to our present knowledge, is more than twice the descent of the Mississippi proper, from its source to the ocean."

The highest peak of the mountains lies S. W. from the source of the Hudson one and a quarter miles; and the party reached the most elevated point about 10 o'clock. After clearing the zone of dwarf pines and spruces which surround the mountain, they found the open rocky surface covered only with mosses, lichens, and small alpine plants; and a clear view in every direction. On some small deposits of water in the rock, ice was found at noon, one-half an inch thick. "Around lay scattered in irregular profusion, mountain masses of various magnitudes and elevations, like a vast sea of broken and pointed billows. In the distance lay the great valley or plain of the St. Lawrence, the glittering surface of Lake Champlain, and the extensive mountain range of Vermont." Through a depression of the latter range the party discovered another, and more distant range, but whether the part seen was the White Mountains of New Hampshire, or the Franconia Mountains near the head of the Merrimack, they could not determine. The barometrical observations, on this peak showed an elevation of 5,457 feet, exceeding the height of the Whiteface Mountain by 600 feet, and the highest point of the Cattskill by 1,650 feet.

The party afterwards visited two or three other of the elevated points in this cluster of mountains, none of which equalled, in height, the one already noticed. Two of these points they named McIntyre and McMartin, and the name of Marcy has been bestowed on the high peak, a merited compliment to our worthy governor. The geological character of this nucleus of mountains is singular, as it is entirely different from that of the country or the mountains around it, and the peculiar rock which constitutes these elevated masses is not found in any other place within the United States. It consists of "dark-colored and sometimes opalescent feldspar, accompanied towards the exterior part of the formation with green angite, or pyroxene, but in the central portions the feldspar alone constitutes almost the only ingredient of the rocks. It is apparently destitute of mica, quartz, and hornblende, and also of any traces of stratified gneiss." * * "The nearest locality at present known of a similar rock, is about 200 miles north of Quebec, on the N. E. border of lake St. John, from whence it extends to the Labrador coast." It is from this coast that its name of *labradorite*, or Labrador feldspar, is derived.

The localities of this kind of rock derive more importance in a geological point of view than they would otherwise have, from the fact that the boulders so thickly scattered over the Oneida country, and more or less over the whole of the lake slope of western New York, are mostly of this kind of rock, and hence can be traced directly as it were to their original location. "The most eastern of these transported boulders, known to exist, is one of about one hundred tons weight at Coxsackie on the Hudson, one hundred and fifty miles south of the labradorite formations, and three hundred feet above the river." We have seen them of several tons weight reposing on the argillaceous range that runs through western N. York, and at elevations of from five to ten hundred feet above the Erie Canal. Prof. Hitchcock, in his valuable geological survey of Massachusetts, traces the boulders that occupy so much of that state, to their original beds, and finds the most conclusive proof that the current that deposited these masses of stone in their present location, must have flowed from the west of north; and the manner in which these labradorite boulders are distributed, not less clearly shows, when their present position and origin are considered, the action of currents powerful and extensive from the north-east. Mixed with these labradorite masses of feldspar, we have seen some few blocks of opalescent or flesh-colored feldspar, and some beautiful specimens that were a pearly white, needing but decomposition to form the valuable earth called kavlin, and used when pure in the manufacture of the finest porcelain. It may be remarked that these latter varieties of feldspar have less the appearance of rolled masses than the dark colored, or labradorite boulders, their angles being acute and apparently of recent fracture, when compared with the heavy blocks of the labradorite. From the researches of the state board of geologists, we anticipate much valuable information on all subjects connected with the geological formations of this state; particularly the position of the various strata, the localities, proofs of currents, superposition, &c.

To show the rank to which these newly discovered mountains are entitled, we have thought it might not be unacceptable to give a summary of the highest mountains yet known east of the Mississippi; we say yet known, because it is not impossible that in the tract of country we have described, mountains of equal, or even greater height, may not exist; and because the citizens in the vicinity of the Black Mountain, in North Carolina, are putting forward its claims to be considered the highest mountain in the United States. No accurate measurement of that range has, however, yet been made, so far as we know, and experience shows that the eye in estimating, or the feet in climbing heights, are not always to be depended upon. Those given are the result of barometrical observations conducted with great care by scientific men, and in most cases, repeated admeasurements have verified the correctness. We commence with some of those determined by Mr. Redfield and his scientific party.

Lake Champlain above tide-water,	90 feet.
West Moriah, Schroon River,	1,117
Johnson's, at Clear Pond.	2,000
Boreas River bridge,	2,026
Hudson River bridge,	1,810
McIntyre,	1,889
Lake Henderson outlet,	1,936
Lake Colden outlet,	2,851
Hudson River, above the Dyke Falls,	3,356
do. in the High Valley,	3,711
Source of the main branch,	4,747
Summit of Mount McIntyre,	5,183
do. Mount Marcy, or the High Peak of Essex,	5,467

The party estimated that there were not less than ten peaks within a short distance that would reach 5,000 feet; "and beside these there were not less than a dozen or twenty others that appear to exceed the highest elevation of the Cattskill group." Thus it appears that this cluster probably furnishes more peaks above 5,000 feet in height, than all the rest of the United States; though Mount Washington still deservedly wears the palm. We collect from various authentic sources the measurements of the following mountains in the United States.

Monadnock,		3,450
High Peak of the Cattskills,		3,718
Round Top	do.	3,804
Mansfield Mountain, Vt.		4,279
Munroe,	White Mountain group.	4,356
Franklin,		4,711
Madison,		4,806
Jefferson,		5,058
Adams,		5,328
Washington,		6,237

Mr. Redfield remarks, "Owing perhaps to the lime and soda, which are constituents of the labradoritic rock, and its somewhat easy decomposition when exposed to the atmosphere, the soil of this region is quite favorable to the growth of the forests, as well as the purposes of agriculture." This opinion, so far as regards the soil, may be correct, yet it is evident that the vicinity of high mountains in such a northern latitude, must have a direct tendency, by reducing the temperature, to prevent the operations of agriculture to any considerable extent. Air cooled below the freezing point in August on the tops of mountains, easily finds its way to the valleys and plains below, producing early frosts, destructive to fruits and vegetables. Our impression is, that it is in the mineral riches of this region, and not in agriculture, that the true source of profit resides. Sprinkled with lakes, covered with the densest forests, abounding in the finest streams and water-falls, and possessing inexhaustible supplies of the most valuable iron ore, nothing seems wanting to make this mountain district the Wales of the United States, and from its furnaces and forges send forth the iron, for which millions are now annually sent abroad.

AGRICULTURE OF TUSCANY.

Extract from Simond's Tableau.

[Translated for the American Farmer, by a friend in South Carolina.]

XI. Sec.—*On the Assolemens.*—The assolement, or regular rotation of crops, forms one of the most interesting parts of the agriculture of Tuscany; this rotation continues either during three years, and then the ground is planted five times; or four years, when it is planted seven times without ever being left in fallow. The three years' course is as follows: 1st. Wheat followed by lupines in the autumn. 2d. Wheat followed in autumn by turnips, or any other forage crop. 3d. Indian corn, millet or sagine, (holcus sorgum, Linn.) The four years' course consists of—1st. Wheat succeeded by French beans (haricots) intermixed with Indian corn. 2d. Wheat with lupines in autumn. 3d. Wheat with forage in autumn. 4th. Indian corn followed by millet or sagine.

XIV. Sec.—On turning in lupines as a manure. As soon as the wheat harvest is finished, the ridges into which the land had been previously thrown are divided into two parts, and a small harrow which is called by the inhabitants *spianuccio*, is drawn over each second ridge while the other remains untouched until the whole field is passed over. The lupine, lupinus albus, (Linn.) which is sown on the fields thus prepared, is a leguminous annual plant, which grows to the height of two or three feet, and requires no support; on the contrary, although its stalk puts forth a great number of branches, each is hard, strong, and of a very woody fibre; the flowers, which are of the size, form, and nearly of the color of those of the bean, are gathered together in large clusters at the end of each branch—and the long pods which succeed them contains the lupines, resembling large peas flattened. The lupines are planted in the month of August or September, on such of the ridges as have been harrowed, and are covered in with the hoe. The ordinary moisture of the plane is sufficient to make them germinate and grow; they are, however, commonly refreshed by seasonable rains which assist their vegetation. The lupine is generally well grown by the month of October, which is the seed time for wheat, for which it is intended to prepare the land. When it has grown to the height of 15 inches, it is ploughed in, and left to rot in the land, possessing more than any other plant yet known, the property of fertilizing by the decomposition of its leaves. The same operation of the plough, which buried the lupine, prepares the ridge for the seeding of the corn, which is then covered with a hoe; this operation of burning the lupine to fertilize the earth, is what is called by the Italians the sovercü or rovescü; it shows great knowledge of the best principles of agriculture, and succeeds wonderfully in fertilizing the earth. The peasants sow sometimes different plants for the same purpose, among others, they sow beans, but none rot so thoroughly or so fast as the lupine, nor possess the power of fertilizing in so high a degree. When it is heated in an oven or large kettle, so as to destroy its vegetation, it becomes the most powerful of all manures; it is said that three or four pounds of these lupines, buried at the foot of an olive tree, or a fruit tree that is decaying, will restore it to all its health and vigor. Careful gardeners use it, but always in very small quantities, to manure their orange trees, instead of horse manure—and produce from it surprising effects.

XV. Sec.—*Haricots, or French beans.*—Sometimes instead of lupines which enrich the earth, such farmers as have an abundance of manure, sow after the first year, French beans, which impoverish it. They are intermixed with some grains of Indian corn to support them, instead of sticks and branches. The kind of beans which bears the drought best, and is alone proper to be planted after the harvest, is marked with an eye about the germ, from which it is called faggiuole dall occhio. When these are planted, the course of cropping continues four years, because it is not until the year following that in which the beans

are planted, that the farmer can sow the lupine for fertilizing the earth, by burying which, is conceived by all to be absolutely necessary.

Second year.—Forages.—After wheat harvest of the second year, the land is turned up afresh, in the months of July and August, and the forage crop is planted in September. The two kinds of forage crops most in use, are a mixture of lupines, flax, turnips, and the annual trefoil, or lupinella; it may appear strange to observe flax ranked among the forage crops, but its grain is very abundant, and easily gathered, the plant endures the winter extremely well, grows quickly, and furnishes an abundance of leaves, of which the cattle are fond. As the lupin grows much faster than the flax or the turnip, it is pulled up towards the end of autumn. When it is well grown, and after being washed, it is given to the cattle that are fond of it—notwithstanding its bitterness. The flax and the turnips, which are choked by its growth, prosper as soon as it is taken away; during the winter, these last are drawn as they are wanted. The flax is mowed in the spring, and towards the middle or end of May, all has disappeared. Among the turnips that are planted, not one half ripen, being relied upon, more for their leaves, than for their roots, in the nourishment of cattle. There are many varieties in Lucca; those that are cultivated are large and long, and of a yellow skin, such as the turnips which are called English turnips. In the planes of Pescia, they are large, flat, and colored red and rose, the produce of the seed removed from one place to another, does not resemble the plant from which the seed was taken.

In Parma and Milan, more turnips are planted than in Tuscany; in the two provinces, with the exception of the rice-fields, the assolement is for two years, and consists of wheat, turnips, and Indian corn; or if it is prolonged to three years, it is in order to plant beans or turnips, twice in the course of the third year, for the purpose of burying them in the nature of the severcio. The prodigious quantity of turnips, which covers these rich provinces, must have been very agreeable to Arthur Young, when he travelled over them. The lupinella, or annual trefoil, (trifolium incarnatum, Linnæi,) is one of the most beautiful plants, which is cultivated as a forage crop; its beautiful carnation oblong flowers, the deep color of its foliage, and the vigor of its vegetation, make it the ornament of the fields; it is planted in September, and mowed between the middle of April, and the middle of May, sometimes it is intermixed with lupines, which are taken up in autumn, its forage is more abundant than that of the flax, but it is mowed only once.

Third year.—Indian corn.—After the forage crop is gathered in, the ground is completely turned up with the spade; this work is commenced about the middle of April and is continued during the month of May; the preparation of the ground with the spade always precedes the planting of Indian corn, which constitutes the crop for the third year. It is planted during the three months of April, May and June, although it is sometimes planted as late as July, on moist spots, but there it is of a particular variety, which grows more quickly but produces less, and is called sessantino, because it ripens in sixty days. Indian corn planted in the plane, about the end of April, suffers little from drought, provided it has rain about the beginning of July, which most commonly happens. The corn is planted on large ridges with hoes, and although it is scattered with a great deal of economy, more is nevertheless put in, than is suffered to remain—this is done to provide against the attacks of insects, which often destroy it, as soon as it begins to sprout—when it is out of harm's way, the superfluous plants are taken out, and each plant is removed from the other about 10 or 11 inches on the rows, but each row is distant about 20 inches or two feet—it is moulded up twice during its growth; while it is growing it furnishes an abundant and excellent forage, of which the cattle are very fond. The Indian corn is a great resource to the people, and furnishes an excellent aliment. Mixed with wheat in bread, it gives the bread a reddish-yellow appearance, but does not injure the taste. The peasantry live chiefly on Indian corn, either in the shape of *farinata*, or *pollenta*. To make *farinata*, the meal is thrown into a kettle or porridge pot, containing boiling water, and seasoned with butter, oil, or broth, (couillon,) and salt; it is then stirred for five or six minutes, when the fire is withdrawn. It is served up as a soup, or thick couilli; the pollenta is made like the farinata, but without grease, and is more thick, so that in withdrawing it from the fire, it should be of a solid consistency; it is then cut with a thread, and placed on a gridiron over burning coals for some minutes. These two modes of using the Indian meal, have the advantage of rendering very little bread necessary; for this substance, without having too much taste, has nevertheless enough to render it palatable, without any other accompanying food. It is probable that it would be more nourishing, if it was better cooked, for the laboring people complain, that it fills them without strengthening them, while on the other hand, Count Rumford remarks that Indian corn, *well-prepared*, is the most wholesome and nourishing of all grains.

From the American Farmer.

PUMPKIN SEED OIL.

To the President of the Hampshire, Franklin and Hampden Agricultural Society.

Dear sir—As a member of your society, I deem it to be my duty to communicate to you the result of an experiment that I have made on pumpkin seeds, in the linseed oil mill.

A number of my neighbors furnished me this year with seeds, which, together with my own, made about nine bushels, and on making the experiment, I found that they produced about six gallons of oil, and probably when the experiment is tried upon a large scale, they will produce more. I tried the oil on the screw of the oil press, and find that it answers an equal purpose, to prevent friction, as sweet oil, and of course, it will be good to use on the axeltrees of carriages that are made of iron, either alone, or mixed with tar, to prevent friction. I have also tried it in the lamp, and find it to be as inflammable as lamp oil, and without the offensive smell of that oil; and the light emitted from it is of a greenish-yellow tinge, and is easier to the eyes, and, especially, when reflected from white paper, than the weak glimmering light of a candle, and of course the light is easier

to read or write by, and especially to weak eyes.

I have been informed by gentlemen of medical skill, that the seeds of pumpkins have so great a tendency to promote urine in animals, as to render them unfavorable to their health; and a neighbor of mine informed me that his geese became so relaxed as to be unable to go, by eating pumpkin seeds. *These* circumstances induced me this season to cut open my pumpkins, and take out the seeds before I gave them to my cattle, and I found by the experiment last fall, and the beginning of winter, that my horned cattle, sheep and swine derived the greatest benefit, with the least expense to myself, of any thing that ever I tried in the agricultural line. And from the little experience that I have had as a farmer, I am induced to think, that there is no one article that is cultivated, from which so much advantage can be obtained, by so little labor, as from the cultivation and right use of the pumpkin. It is probable that the oil of pumpkin seeds may be made a complete substitute for tallow; and when it is once introduced into use, it will probably be worth at least $1 50 per gallon. Children can with the greatest ease take out the seeds when the pumpkin is cut open, with a spoon or their hands, and spread them on a floor where they will soon dry; and it is proper that they should be preserved clean, and without being suffered to mould. In the United States, where there is such an unbounded region of land, and labor above the price of produce, the main object of the farmer ought not to be the obtaining of the greatest quantity of produce, from the best piece of land, as in many places in old countries which are so crowded with population as almost to be in a state of starvation, and labor of no consequence; but the obtaining of the greatest quantity from the least labor and expense, taken together. I have no idea that fields appropriated exclusively to pumpkins would be profitable like those of corn and pumpkins planted together; for if they be planted too thick they are no inconsiderable damage to each other. There ought not probably to be more than one pumpkin suffered to grow to twenty hills of corn, otherwise they are apt to choke the growth of the corn, and not produce so many or so good pumpkins either. It costs scarce any more labor to raise corn and pumpkins in the same field than it does to cultivate it exclusively for corn, and perhaps the crop is worth a third more. On the whole, I am inclined to think that this subject is worth your notice. I am yours, &c., respectfully,

JOSIAH WHITE.

Northampton, March, 17, 1820.

From the American Farmer of 1824.

REMARKS AND INQUIRIES ON THE EFFECTS OF MARL AS MANURE.

Mr. Editor.—I find marl is becoming to be a subject of great inquiry, and is very generally growing upon the attention of the agricultural world. There is nothing which merits attention more, for in every instance where it has been applied it has been considered the most successful of all manures. There was a writer in your paper (Mr. Ruffin) who gave us one of the most correct accounts of the operation of marl on lands that I have ever seen; and further views from the same pen would still lay the agricultural interest under greater obligations to him. What Mr. Ruffin there asserts of marl correcting the acid quality in lands has been found to be true by all who have used it; and besides, he might add, that it is a great cleanser of lands, which manures are generally not—it certainly destroys all the noxious growth which puts up in acid lands, oftentimes to the great injury of the crop; and to the sheep sorrel it is certain destruction.

All the marl I have seen in Maryland is shell marl, which lies in large beds or strata, and has been generally found near the margin of the banks of rivers or creeks—this, I presume, is because it has cost less labor to find it there than elsewhere; but I have no doubt that the same strata can be found in the interior, if it was diligently searched for. They are generally from three to six feet under the surface, and present considerable variety in appearance. Some are composed of common oyster shells alone, which are very different from what are called shell banks—others are composed of what are commonly called clam shells—others of clam shells, muscle shells, and a great variety of scollop shells—others of shells so decomposed that it is difficult to class them, and these last are often intermixed and discolored with a sort of furruginous substance—others again present you shells completely broken down to lime, intermixed with sand, which of itself makes a pretty strong cement; and indeed the varieties are not only numerous and singular, but often very beautiful. The comparative effects of these different kinds of marl have not been ascertained, as they are generally different on different farms, but all agree who have used them, that the first year's product in wheat is increased to more than half as much more, but that the second crop, from one marling, is oftener more than double than less than double—this is easily accounted for upon the supposition that the marl does not become so well incorporated with the earth upon the first as upon the second tillage—but if the marl was strewed on fallow land, and two extra harrowings were given it after strewing, there can be little doubt but the incorporation would take place, and the product be improved. I find my marl acts better upon wheat succeeding my corn, than upon naked fallow, where the marl was spread on both the same year; and I account for this result, so different from what is experienced from all other manures, from the frequent harrowings I give my corn during its cultivation; for I cultivate corn principally with the harrow, as being the cheapest, most expeditious, and best implement; and my lands are stiff soils.

None but those who have been eye witnesses to the effects of marl can believe them—they are truly wonderful—old worn out clay soils, that were literally good for nothing, have been regenerated by marl alone, and present the appearance of our best and natively rich lands—and there seems to be no end to the improvement—under one marling the product increases at each cultivation, and a second marling is followed by results proportionable to the first. Such is the conviction here, as to the effects of marl, and the conviction arises from practical experience, that the discovery of a marl bank is supposed to double the value of the farm.

My principal object in making you this communication, is to endeavor to elicit Mr. Ruffin out upon this subject, whose experience, observation, and reasoning are far more satisfactory and useful than any thing I have ever met with.

AGRESTIS.

From the American Farmer of Feb. 27, 1824.

ANSWER TO THE FOREGOING.

Prince George, March 12th, 1824.

Having been some time from home, I did not until to-day, see the call on me in the American Farmer of February 27th, and the private note from you on the same subject. I feel highly gratified, that your correspondent, "Agrestis," has experience of the correctness of my opinions concerning the action and value of marl; and I am not only willing, but consider it my duty, to furnish any information in my power to give, which may be required on account of the imperfections of my former statement. I do not wish, however, to fatigue your readers, by repeating what has already been stated; and as the request of Agrestis for information, is *general*, I shall confine my remarks to the particular subjects suggested by his account, of the effects of marl noticed by him in Maryland.

Since my former communication on this subject, (contained in your 3d vol.) I have marled more than 250 acres, or about 400 in all—and my longer experience has more strongly confirmed my opinion of the value of this manure, as well as the truth of the theory of its action. But I have never obtained any results so profitable as those mentioned by Agrestis, "that old worn out clay soils, that were literally good for nothing, have been regenerated by marl alone, and present the appearance of our best and natively good lands." I still believe that the use of calcareous manures, will not be found very profitable, except on lands *not grazed*, or which are in some other way furnished with vegetable matter. On acid soils, (not grazed,) I expect a dressing of 500 bushels of marl to the acre, to increase the first crop from 50 to 100 per cent.; and under peculiar circumstances, have attained nearly 200 per cent. increase; but as all such land was very poor, even this great improvement leaves it much inferior to natural rich soils. Neither have I found that "a second marling is followed by results proportionable to the first," nor will its *mode of operation* justify such expectations. In every thing else stated by Agrestis, his experience of the effects of marl, agrees entirely with mine. The improvement is evidently progressive, and I believe, will continue to increase, until the soil is brought to its maximum of productiveness, or until the new accumulation of vegetable matter, and of acidity, cause a necessity for a second dressing of marl, which *then* will operate in the same way, and with as much profit, as the first application.

The cleansing effect of marl is also evident. The plants which are most abundant on acid soils, will thrive on no other kind; and therefore, are destroyed at once, when the soil is made calcareous. But your correspondent will not find this clean state of marled land to be permanent. One set of pests has been removed, only to allow another to succeed. *Wire-grass** is more benefited by marl, than any other plant that I know of; and the increase of this troublesome and indestructible grass, is the only injurious effect of marling, that I have yet experienced. Perhaps *blue-grass* may be considered in the same way, as I find it now on many parts of my land, where it never had been seen until within the last two years. This grass is scarcely ever seen in this part of the country, and there is not any where enough to be troublesome, except on the best neutral soils, which I suppose to have been originally marled by natural means.

Your's, &c.

EDM. RUFFIN.

[The two foregoing letters were published more than 14 years ago; and we had forgotten their existence until they were lately met with accidentally. Marling (or, properly, the application of fossil shells,) was then a novel mode of improvement in this country, and which had then been tried by but very few persons. It is, sometimes, both interesting and useful to revert to early opinions and practices, after the lapse of time may have served to test their value. It will be seen from the answer, above, that the writer even then, as since, and up to the present time, tried to abate the too exalted opinions of the *enriching operation* and *general beneficial action* of calcareous manure, no less than to establish its true action and value, and direct attention to its proper mode of application. The writer has now had practical experience of the effect of marl of more than thrice the length of time which had been gained before the foregoing answer; and yet there is but one opinion there expressed which he would now qualify, or limit, or deem it necessary to explain, to prevent its leading to error and loss. In speaking of the benefit expected of 500 bushels of marl, it should then have been stated, as meant, of the very moderate strength of the beds he had mostly used, which generally varied between 30 to 40 per cent. of carbonate of lime—generally about 38 per cent. Also—he had not then ascertained, that even of this poor marl, 500 bushels was too heavy an application for poor and worn land, and that much less marl to the acre is safer, cheaper, and much more productive of net profit. The summer of 1824 first showed the evil of the too heavy previous dressings; and the facts, and the corrected views of the writer, on this head, have been since published at length.—ED. FAR. REG.]

GREASE FOR WHEEL-AXLES.

"What is the best *grease* for wheels?" said one *whip* to another the other day. "*Tar*," said the other. "*Tar!* I despise tar, and grease *won't stay there*. Now had they put the question to our *grave selves*, we could have told them of a valua-

* The "wire-grass" of lower Virginia, is the "couch" or "twitch-grass" of England.—ED. FAR. REGISTER.

ble material to diminish friction, not only in carriage-wheel boxes, but in all machinery whatever. The composition, we believe, was first used in the iron-works on the Boston mill-dam, and consists of *soapstone*, finely pulverised, and mixed with grease or soft tallow. It is an excellent application—a real *anti-frictionist*.—Maine Farmer.

From the Newbern Spectator.

LETTER FROM THE SECRETARY OF WAR

In relation to the survey from the Southern Debouche of the Dismal Swamp Canal to Winyaw Bay.

MAY 28, 1838. Referred to the Committee on Roads and Canals. JUNE 27, 1838.—Ordered to be printed.

Department of War, May 26, 1838.

Sir: With the accompanying report of the officer in charge of the topographical engineers, is respectfully submitted the report of the survey from the southern debouche of the Dismal Swamp canal to Winyaw Bay, in South Carolina, called for by a resolution of the House of Representives of the 9th ultimo.

Very respectfully,
Your most obedient servant,
J. R. POINSETT.

Hon. JAMES K. POLK,
Speaker of the House of Representatives.

Bureau of Topographical Engineers,
Washington, May 24th, 1838.

Sir: I have the honor to submit a copy of the report of "the engineer charged with making the survey from the southern debouche of the Dismal Swamp canal to Winyaw Bay, in South Carolina, with a view to determine the practicability of opening an inland communication for steam navigation from the Chesapeake bay to Charleston," called for by a resolution of the House of Representatives of the 9th of April.

Very respectfully, sir,
Your obedient servant,
J. J. ABERT, *Lt. Col. Top. Eng.*

S. COOPER, Esq. *Acting Secretary of War.*

Washington City, May, 21, 1838.

Sir: I have the honor to report that, on the receipt of your orders of the 28th March, 1837, assigning me to the surveys near the coast of North Carolina, I proceeded to organize the requisite means for carrying them into execution. Some delay was necessarily occasioned by the scarcity of competent assistant engineers, and the necessity I was under of seeking them amongst such of the civil engineers not in the employment of the Government, as chanced at the time to be disengaged from other service. I succeeded, however, in forming two parties.

The act of Congress passed the 3d of March, 1837, required the survey to be made from the southern debouche of the Dismal Swamp canal, down the Pasquotank river to Elizabeth, thence to Croatan sound, Pamlico, and other sounds, near the coast of North Carolina, and thence by the most practicable route to Winyaw bay, in South Carolina, with a view to determine the practicability of opening an inland communication for steam navigation from the Chesapeake bay to Charleston, South Carolina. The reconnoissance of part of the line had been reserved by my original orders for another officer. Subsequently, however, the reconnoissance, as well as the survey of the whole of it, was assigned to me. No examination of the ground, however, was required before the parties began to operate in the field. The frequent professional tours of duty which I had formerly occasion to make near the coast of North Carolina, with the surveys already executed there for military purposes by officers of the corps of topographical engineers, viz: by Majors Abert and Kearney, and by Captain Bache, enabled me at once to draw up the requisite instructions to the chiefs of parties, and to assign to them the limits of their operations for the surveys requiring the earliest attention; and the time usually consumed in the preliminary examinations was whereby saved. One of the parties was directed to survey Joyce's creek and Pasquotank river, from the canal to Albemarle sound, very carefully, wherever especially there should be found a less depth than eight feet of water, and wherever any obstruction to the free navigation of the creek or river should present itself. A general examination of Albemarle sound was likewise required in the direction of Croatan sound, for the purpose of verifying the existence of a sufficient depth of water for the passage of steam vessels. This work having been completed, Core sound and the passage through the marshes were carefully surveyed, to ascertain whether any change affecting the navigation had taken place since the period of the surveys made there by Captain Bache. It was intended, also, that the same party should connect, at least by a chain of triangles, the work of Pasquotank river with that of Croatan sound, and the Roanoke marshes with Harbor Island bar—the limit of the surveys entrusted to the other party of engineers employed upon the sounds; and it was intended, also, to have taken soundings upon Long shoal, Bluff shoal, and other parts of Pamlico sound; but the advanced season, and a desire to preserve the health of the party for the prosecution of the surveys to be undertaken during the autumn of that year, joined to other circumstances, not necessary to be here stated, made it expedient, in my opinion, to postpone this part of the work to a suitable occasion. In consequence of this, the party was enabled to make the survey of that part of the line from Beaufort harbor to Swansborough and Bogue inlet before the sickly season had begun.

The other party of engineers surveyed with great care, and very skilfully, under the immediate direction of the intelligent and experienced assistant who had it in charge, the whole of Core sound; so that nothing further remains to be done there, to enable us to form the project and estimate the cost of its improvement in the greatest detail, unless it be at some suitable season during the prevalence of the storms which characterize the spring and autumn; for example, to make such observations as will enable us to ascertain the direction, velocity, and effect of the currents, which may possibly prevail there when the winds blow for a long time from the same quarter. On the termination of the survey of Core sound, I in-

structed the engineer in charge of the party there, to take rapidly some lines of soundings on the bar of Old Topsail inlet, the entrance to Beaufort harbor, for the purpose of ascertaining the correctness of an opinion advanced by the pilots, that since my survey of 1822 the depth of water on the bar had materially increased.

These operations being effected, and the sickly season at hand, the engineers were withdrawn from the field to plot their work, and arrange the facts which they had collected, preparatory to their resuming the surveys proposed to be made farther inland during the latter part of the fall and the beginning of the winter. We had, in a comparatively short time, collected much information; our work had extended itself to a distance of about 220 miles; and, taking into consideration the surveys heretofore made under the direction of the officers of the corps whom I have named, with the observations, the result of various professional visits to the coast, we are enabled to take general views of the character and extent of the improvements of which the sounds, at least as far westward as Cape Fear river, are susceptible; they enable us to form opinions on the question of their probable permanency; the advantages to result to the commerce of the country; and, for a great part of the distance, we have the means of estimating their probable cost. Especially is this the case with respect to the line from the Dismal Swamp canal to Swansborough. To the westward of that place, the very close reconnoissance which, in the year 1822, I made of the sounds lying towards Cape Fear river, enables us to appreciate their value with reference as well to commerce as to military defence.

The memorandum which I had the honor to submit to your consideration as the basis of a reply to the letter of the honorable C. Shepard and other members of congress from North Carolina, will have made you acquainted with my opinion upon the question of the improvement of Core sound, the value of such improvement to the coasting trade and to foreign commerce, and it will have shown the connexion of that sound with the navigable waters of the state and with the waters of Chesapeake bay. A copy of that memorandum is herewith transmitted, and I have to ask your attention to it in connexion with this report.

The practicability and importance of a navigable communication inland, between the Chesapeake bay and Beaufort harbor, viz.: by Elizabeth river, the Dismal Swamp canal, Pasquotank river, and Albemarle, Croatan, Pamlico, and Core sounds, are unquestionable. It would be out of place in this preliminary report to enter into a minute description of the sounds and rivers embraced by the surveys of the past season; nevertheless, we may state that west of Beaufort, the sounds, generally, are much narrower, and with a greater number of shoals than are those I have enumerated. Bogue sound, though broad, is very shallow. Those lying between it and Cape Fear river are, for the most part, full of marshes, through which we find the passage to be by narrow and tortuous creeks, with extremely shallow bars, wherever the tides meet in their passage from the numerous small inlets with which the line of coast is indented. The only barriers between these sounds, generally, and the ocean, are low and narrow sand-banks; over which, in many places, the waves are swept by the hurricanes; the sands are carried by the sea and the wind into the sounds; shoals are formed, and become the bases of salt marshes; the accumulation of matter over their whole area and in their channels is thus progressive. The communication between them is sometimes closed by the silt carried forward by the tides and by the encroachment of the marshes, and it becomes necessary to open small canals for the passage of lighters and canoes at high tide. To this description, which is very extensively applicable to the sounds west of Bogue, there are exceptions, which it is unnecessary for our present purpose to enumerate, unless it be required in the case of the portion of the sound lying near New river, to which I have referred in the memorandum already alluded to.

It is apparent from these facts, I think, that the question of the practicability and cost of opening a channel for steamboats west of Beaufort, or certainly of Swansborough, yields, in point of importance to the consideration of the practicability and expense of defending it against the inroads of the sea and the encroachments of the sands. The exposure, too, of this part of the route to the enterprises of an enemy, during periods when it would be most required for the security and accommodation of trade, became so apparent from the facts developed during our examination, that it was deemed advisable to inquire whether a route might not be found farther inland by which to connect the sounds and navigable waters east of Beaufort with some branch of Cape Fear river. Subsequent inquiry, supported by our previous knowledge of the country, led to the opinion that probably a canal might be constructed of the requisite capacity, and with a sufficient supply of water, from Neuse river to the north-east branch of Cape Fear river. The facts and reasoning upon which this opinion rested were verbally communicated to you; and as they received the sanction of your favorable opinion, one of the parties of engineers was instructed to make such surveys and examinations of the country, near the presumed line of communication, as would enable us to arrive at more accurate and distinct ideas of the adaptation of the ground to the project. On resuming the field operations, therefore, I organized a party for that purpose, in the stead of the one which had surveyed Pasquotank river and the sounds east of Harbor island, which had been broken up by circumstances unconnected with the service. This I placed under charge of an experienced and intelligent principal assistant, who had already served under my orders, and who performed the duty entirely to my satisfaction.

The survey commenced at a point on the north-east branch of Cape Fear river, 47 miles above Wilmington, and 5 miles below the head of navigation—8 feet water. The point of beginning was within a few yards of the mouth of Hollyshelter creek; thence it was traced nearly parallel with that creek, crossing in its course Shaking creek and several of the minor streams which issue from Hollyshelter swamp. It crossed Hollyshelter creek at Outen or Little lake, and thence followed the course of Big Sandy run to a location, the source of some of the tributaries of Cape Fear river on the one hand, and of New river on the other; thence it pursued nearly a direct

route to Ward's landing, on the south-west branch of New river—length 25 miles 1,639 yards.

Thence the line coincided with the navigable waters of New river and its branches—the south-west and north-east—for a distance of 10 miles 616 yards, viz.: to Ball's landing; hence, it was traced by the way of Ethridge's mill to the head of Grant's creek, and with that creek to Whitock river, at Lee's landing, a distance of 9 miles and 1,683 yards; thence one mile and 100 yards with the river to Haywood's landing. From Haywood's the line passed through E. Jones's plantation, and along the north bank of Hunter's creek, by the southern shores of Big lake and Ellis's lake; thence down Spaight's canal and Slocum's creek to Rial's landing—20 miles and 1,012 yards. Rial's landing is one mile above the forks of Slocum's creek. From the forks to Neuse river, four miles. Slocum's creek is a broad navigable stream; it joins the Neuse 17 miles below Newbern.

The entire length of the line surveyed by the party is 67 miles and 1,429 yards, including the river and lake navigation; exclusive of these, 53 miles and 22 yards. The highest point in the experimental line between the north-east branch of Cape Fear and New rivers, was 41½ feet above the surface water of the river at the point of beginning; but this may be materially reduced by following the course of Haw's run. Between New river and Whitock river the highest point was 43 feet, and between Whitock river and Slocum's creek it coincided with the lakes—Big lake being 38 feet, and Ellis's lake 33¾ feet. These lakes were surveyed for the purpose of ascertaining approximately their capacity as reservoirs for the supply of the summit and lockage of the canal; and we are warranted in assuming that a sufficiency of water may be found for these objects upon the summit-level.

The survey now described between Cape Fear river and Slocum's creek serves only to manifest the practicability of uniting the Cape Fear with the Neuse. Other surveys are required preliminary to the definitive election and location of the line of canal. These would probably be traced (one of them at least) between the north-east branch of Cape Fear and Trent rivers; and another, departing from Muster landing on the north-east, would follow the course of Haw's run to Shepard's mill, thence to Onslow Court-house, Moss's landing on the western prong of the north-east branch of New river, thence to Lee's landing on Whitock river, thence to Big lake, Ellis's lake, and Spaight's canal, to Rye landing on Slocum's creek. This line would be about 56¼ miles long. Its summit-level would coincide with one or other of the lakes, or, being separated from them, it would be placed in a plane sufficiently low to enable us to command for the supply of the canal as much of their water as might be deemed requisite. The summit-level would cross the navigable streams at points the least prejudicial, and it might be prolonged to any desirable extent between the points of termination of the canal.

Surveys should be made also to ascertain the practicability, the best means, and the cost of uniting the main trunk of the canal with the harbor of Beaufort by a branch traced in that direction. Its connexion with navigation on Whitock river and Neuse river would be directly effected by means solely of locks constructed at the point of passage of those rivers.

To the north-eastward of Neuse river it may become advisable to make other surveys, that we may have the means of presenting to Congress a view of all the routes by which a navigable communication might be established between Albemarle sound and the Neuse. In examining the relative merits of these, and their several claims to attention, the professional views which would most probably influence the mind of the engineer in his selection might not possibly be those to which the legislature would be disposed to attribute the greatest force. There are other reasons which may render it expedient not only to carry the surveys between the Neuse and Albemarle sounds farther inland, and which may even require us to examine more minutely than we yet have done the two great sounds, Pamlico and Albemarle. The result of such examinations might possibly even affect seriously the character for stability of a portion of the route by the sounds. How far the causes which have operated to close the inlets formerly existing in front of the sounds may have tended also to affect the depth of the sounds themselves, or whether they have had any influence, deserves to be investigated. If we compare the chart of Lawson with that of Cole and Price, we are led to believe that the depth of water off the shoals, at least, is much less than it was in Lawson's time, Nevertheless the soundings given in one or the other of these charts may be erroneous. It is desirable, I should think, to have this question settled before the adoption of any particular project involving great expense in its execution. A careful comparison of the present depth of water in all the navigable parts of the sounds I am now speaking of, with the depths noted by Lawson, Price, &c. will enable us to determine whether or not the depth is lessening in them, and if so, the periodical rate of diminution may also be ascertained. The solution of this question might possibly influence the location of the north-eastern debouche of the Cape Fear and Neuse division of canal; and however desirable it might otherwise be presumed to be to carry that as low down the Neuse as practicable, we might find it expedient, under the influence of the facts to be developed by the hydrographic survey, to carry it in the direction of Newbern, Washington, and Plymouth.

The line of canal, 56¼ miles in length, between the Neuse and Cape Fear rivers, which has been described, would suffice to open an inland communication for steamboats from the southern debouche of the Dismal Swamp canal to Wilmington, N. C., and to the ocean.

The proposed route, via the sounds and Slocum's creek, would lie parallel to the coast, and, crossing the principal navigable streams of the State of North Carolina, would be found to possess all the advantages of a general line of communication for the trade of those rivers; the rivers themselves not having usually such outlets as would enable the produce of the interior to find an exit by the way of the ocean to other parts.

The same observation will equally apply to the other divisions of the work, viz.: that of the Brunswick and Red-bluff division, as also that from Winyaw bay to Charleston.

It is obvious that such a line of improvement, especially when considered with reference to its direct connexion with some of the best harbors on the coast, is of general interest, being equally advantageous to the commerce and defence of the country.

Of the surveys made under the authority of the act of Congress of the 3d of March, 1837, there remain to be described those only which lie to the westward of Cape Fear river, between the Green swamp and the ocean. The surveys which I had formerly made near Waccamaw lake and the Green swamp, led to the opinion that if a navigable communication between the Cape Fear and Waccamaw rivers were at all practicable upon any line remote from the narrow sounds which border upon the sea, it must be traced between the ocean and the Green swamp, and that in all likelihood it should rely upon the water yielded by that swamp, and upon such as might be collected nearer the sea for the supply of the summit-level and lockage of the canal. With this view of the subject, and to test its correctness, the party of engineers which had been employed during the early part of the summer upon Core sound was, at the proper season, directed to make upon the ground I have just described, such surveys and observations as time and the means at our disposal would permit. Accordingly that party ran a guide-line of levels and a line with the compass from the Red bluff on Waccamaw river to Brunswick on the Cape Fear, 16 miles below Wilmington, and extended its observations into the swamps as far as the inundations would permit—for at that time the rains had set in.

The distance from the Red bluff to Brunswick, and consequently the length of canal, if it were constructed upon that line, would be about 56½ miles. The examinations which the party was able to make with reference to the means of supplying the summit-level with water were necessarily very limited; nevertheless, such as they were, they were far from discouraging the expectations of success which had been created by the surveys formerly made farther inland. Whenever the necessary appropriations are made to enable us to resume the surveys, a close and extensive survey and examination of the Green swamp, and of the country lying between it and the sea, will be undertaken. When these will have been completed, and not till then, can we be authorized to form any decisive opinion upon the question, not of the sufficiency of the quantity of water yielded by the neighboring swamps and lakes, but of the practicability of conducting it to the summit-level of a canal to unite the Cape Fear with the Waccamaw. In the mean time, the probability that it is practicable is so strong, in my opinion, as to justify the department in prosecuting the inquiry.

Near Red bluff there is a shoal in Waccamaw river, at the head of tide; it is about 200 yards over, with a depth of but 1½ foot at the lowest stages of the water. The canal would debouche below this; hence to Winyaw bay and out to sea, the only obstruction to the navigation of the river by steamboats lies five miles below Conwaysborough, at Cox's shoal, where, at the lowest water, there is a depth of six feet; the length of the obstruction does not exceed 150 yards. With this exception, there is in the Waccamaw river, below the proposed termination of the canal, at all times a depth of not less than eight feet of water, with a bold navigation, the river making good reaches, except at the "Wild Horse," about seven miles below the Red bluff, where for a mile and a half it is very rapid and crooked; and again about a mile below Conwaysborough, where the river, for about 200 yards, is also rapid and crooked, although deep.

Between Winyaw bay and Charleston we have done nothing, except to reconnoitre the country, for the purpose of becoming acquainted with the general character of the ground, and with the routes which may require to be surveyed.

From Winyaw Bay there is a passage to sea, over Georgetown bar, with a depth of 7½ feet at low water. This bar lies far out at sea, the channel is very crooked and difficult of navigation, and the depth of water is represented to be decreasing. A project to connect Winyaw bay with North Pedee, by a canal, has been undertaken and partly executed. It is probable that the steamboat line might follow this route to the Pedee, thence to Charleston. Two lines at least ought to be surveyed; the one lying near the seaboard would avail itself of the chain of natural navigation now used occasionally by the smaller craft proceeding to and from Charleston, wherever such natural navigation might be found advantageously in the line of improvement; the other route, lying farther inland, might depart from Pedee, and following the best ground, which will probably be found upon a very direct course, to deep water on Wando river, a branch of Cooper river, on which is Charleston. The length of canal from Winyaw bay to Charleston would not probably exceed 45 miles. The ground it would occupy is but a few feet above the tide, and it would not, it is believed, require in any place a greater depth of cutting to tide-water than eight feet. It would therefore be a thorough cut, and would require none other than guard and regular locks.

I annex a schedule of maps, charts, and profiles of the surveys already executed under your orders of the 28th March, 1837. I purpose making a general map also to exhibit at one view the surveys which have been done by the department near the coast of North and South Carolina. The details of the plans for improving the sounds so far as we have the materials for so doing, as well as the calculations of the cost of the improvements, will be undertaken now, or at the conclusion of all the surveys, to accompany the final report, as may be required by your orders.

Very respectfully, I have the honor to be, sir, your obedient servant.

JAMES KEARNEY,
Lieut. Col. Topographical Engineers.

Lt. Col. J. J. ABERT,
Com. Top. Engs. U. S. Army.

Schedule.

Chart of Pasquotank river,	5 sheets.
Croatan sound,	1
Core sound,	2
Details on the bars,	8
Bogue sound,	1
Reconnoissance west of Bogue, made formerly for defence of seaboard,	1
Map and profiles of country between Neuse and Cape Fear rivers,	3

Map and profiles between Cape Fear and Waccamaw rivers, 3

24 sheets.

As stated in the letter addressed to the secretary of war by Messrs. Shepard, Stanly, and other members of Congress from North Carolina, I think most favorably of the importance of Core sound to that state, and to the United States, and am clearly of opinion that its channel ought to be improved, and to an extent beyond that contemplated by the act to which those gentlemen refer in their letter of the 24th of February.

The coast between Beaufort, North Carolina and the Chesapeake bay, for a length of two hundred and twenty or two hundred and thirty miles, is nearly, and in a few years, will be quite destitute of inlets capable of admitting even the smaller class of coasters. The closing of those which formerly existed, (and there have been at least as many as ten of them,) has been steadily progressive. In my opinion, (and it has been long and deliberately formed, and frequently expressed,) the maintenance of a direct navigable communication between either Albemarle or Pamlico sounds and the ocean is impracticable. I purpose in my final report, to attempt the demonstration of this proposition; and I think I will be able to show that Ocracoke, the only inlet now capable of admitting the passage of coasters, will probably also close in a few years. This inlet, which formerly had thirteen feet in low water upon its bar, was last summer reduced to a depth of 6½ feet at ordinary high tides, notwithstanding the efforts of the government to resist the encroachment of the sand upon it. By the storms of August, September, and October last, these efforts were paralyzed, and the hope of improving the inlet was abandoned.

Assuming the impracticability of re-opening and maintaining a communication between Albemarle and Pamlico sounds, at any point upon the coast between Cape Henry and Cape Lookout, we have only left for the trade of those sounds, and of Chowan, Roanoke, Tar, Neuse and other rivers, their tributaries, an opening to the north by the Dismal Swamp canal, and to the south by Beaufort harbor, at Old Topsail inlet. Between Pamlico sound and Beaufort, as stated by these gentlemen, intervenes Core sound, which is between 38 and 39 miles long, and in which are several shoals, some of them having little more than four feet of water upon them at times of very low tide

Beaufort, since the settlement of the country, has never had less than 15 or 16 feet on the bar of its inlet at high tides. It has now, perhaps, 23 feet at high tides. Certainly it has *nearly* that depth, and there are few bars to the southward of it with more; at low water it has 18 feet. A navigable communication for coasting vessels would, therefore, open for the trade of a large part of North Carolina; at least one of the best, and taking the depth of water at low tides, the character of the bar, and the safety of the coast near it, perhaps the best Atlantic harbor south of the Chesapeake bay.

Several routes have been proposed, some of them have been surveyed, and one of them has been attempted, by which to connect the trade of the sounds herein mentioned with Beaufort. It does yet not appear that any one of them combines as many advantages as that by Core sound, or that, if they were effected, the improvement of this sound should therefore be neglected.

The act of Congress to which reference has been made, proposes a depth of 7 feet at low water, and a breadth of 50 yards for the dimensions of the improved channel. The depth is, perhaps, as great as could be attained within the limits of any appropriation of money which could be reasonably expected to be obtained. The breadth is, however, insufficient for all the objects of the improvement. Two hundred yards would be required for a beating channel, and that breadth would also be necessary to enable vessels to continue their way during night as well as day.

The surveys of last year are in a state to enable me to frame a project for the improvement of the sound, and to estimate the cost of it. I have refrained from doing this, and had reserved it until all the surveys proposed by the act of the 3d of March last were completed, with the intention of presenting the whole of the subject of an inland communication south of the Chesapeake bay to the department at one view, not conceiving that I was authorized to report upon detached portions of the subject. I have, however, considered the question of the improvement of Core sound sufficiently to enable me to say, generally, that for a channel of the depth and breadth mentioned by Mr. Shepard, the cost would be somewhat about $80,000; and for the one I have proposed about $300,000 exclusive of any jettees or other works which might possibly be found necessary to protect the sides of the channel from abrasion, or to prevent the channel itself from shifting; but the probability of which I do not, with my present knowledge of the composition of the bed of the sound, by any means anticipate, if the larger plan were adopted.

We are not dependent upon mere speculation for our opinion of the importance of this harbor; it was made manifest by the war of 1812, '13, and '14, during which it became the depot of prizes for many of our cruisers, whence, by lighters, their cargoes were forwarded through the sounds, and by the Dismal Swamp canal, to the northern cities. Tobacco and other produce was sent by that route from Petersburg to foreign markets, whenever the Chesapeake bay was occupied by the enemy. The following extracts from the books of the treasury department will show the importance of Beaufort harbor to commerce at that period, and its contrast with the usual transactions of the port:

Years.	Gross revenue.	Tonnage.
1810	$522	929
1811	2,681	909
1812	18,116	1,022
1813	105,214	1,041
1814	74,774	1,466
1815	4,809	1,538
1816	2,358	1,344

At the period we are now speaking of, the inland communication was embarrassed, not only by the extreme shoalness of Core sound, which still continues, but the Dismal Swamp canal had then but a depth of 18 to 20 inches, and a breadth of about 18 feet at the surface, and it was otherwise in so defective a state that the passage through it was sometimes altogether interrupted; the canal

is now, or is proposed to be, — feet broad, by 6 to 7 feet deep. It is to be borne in mind, also, that Ocracoke had then about 4 to 6 feet in its channels over the shoals in the bay, and that there existed a navigable communication between Currituck sound and the ocean.

I subjoin the following statement to enable you to form some estimate of the value of the inland trade connected with the sounds which lie between Beaufort and the Chesapeake.

Amount of certain articles transported through the Dismal Swamp canal during the years 1833, 1834, 1835, and 1836.

Quarter casks wine	639
Barrels spirits	13,707
Barrels pork	5,540
Barrels flour	30,232
Barrels fish	24,522
Barrels tar	59,421
Hogsheads sugar	890
Hogsheads molasses	1,601
Bushels salt	150,905
Bushels corn	563,535
Bushels wheat and flaxseed	31,004
Bales cotton	24,091
Cubic feet scantling, plank, & lumber	960,672
Staves	23,450,211
Shingles,	100,154,475
Cords wood	8,495
Sundries, dollars	17,800

It should be remarked, that during the year 1835 the navigation of the canal was obstructed for ten weeks, and in 1836 it was totally suspended for seventy days.

The accompanying statement, prepared for me by the collector at Ocracoke, shows that 1,149 vessels, averaging 100 tons, passed through that inlet during the year ending October 1, 1836; of which 893 were bound coastwise, and 256 to foreign ports. In these last the expense of lighterage at Ocracoke was estimated at $100 per vessel.

It is known that, because of the difficulty of getting directly to sea from the northern ports of North Carolina, much produce finds its way to market indirectly through the three commercial cities of Virginia, I have not yet taken measures for estimating how much was the value of the foreign or other goods which enter the state through those cities.

I am of opinion that the improvement of the sounds of North Carolina, as a general channel of communication for the coasting trade, should not extend to the westward of Beaufort. These sounds are very shallow, and beyond Swansborough they are generally filled with marshes, through which wind narrow tortuous creeks, in which we find occasional shoals, incapable of floating at low tide a whale-boat with her crew on board. Besides which, some of them are very narrow, and the sand-banks which separate them from the sea are so low that they are equally exposed to the inroads of the elements or of the enemy.

It is along this line of coast that we find New river inlet, as well as Bogue, the inlet of Whitock river, on which Swansborough is situated.

The remarks which the gentlemen have made respecting New river are undoubtedly very sound, if their views are limited to the existing connexion of that river with the interior, and they measurably apply also to Whitock river. Should, however, a navigable canal be made, uniting the waters of Neuse river with the north-east branch of Cape Fear river (and my surveys of the past season have satisfied me of its practicability) then the importance, not only of New river and Whitock, but of Beaufort also, may be greatly enhanced by establishing a connexion between them and the canal—a connexion which their position in relation to it would invite, and one also which might be formed at an expense much below the value of the improvement to the coasting trade, and to the general commerce of the country, especially in time of war.

Memorandum of distances roughly estimated in statute miles.

	Statute miles.
Norfolk to Bogue point, Beaufort harbor *via* the Dismal Swamp canal and Core sounds,	206
Norfolk, *via* Core sound and Beaufort, to the main bar of Cape Fear river,	350
Norfolk to Wilmington, Dismal Swamp canal, Albemarle, Croatan, and Pamlico sound, Neuse river, Slocum's creek, and experimental line of canal surveyed last year (57½ miles) to north-east branch of Cape Fear river, and thence to Wilmington,	103
Norfolk, *via* Chesapeake bay and the ocean to Beaufort harbor, about	260
Wilmington to main bar Cape Fear river.	

An error appears to have been fallen into respecting the authority under which the surveys were made; that authority is altogether distinct from that for executing the work. But it was necessary that a survey should be made, and a plan of improvement be adopted, before the work was undertaken. It so happened that the appropriation for the special work on Core sound was made before the appropriation and authority for the general survey and plans for an inland communication between the Chesapeake and Charleston. The two duties were assigned to separate branches of the service; the execution of the work on Core sound, in the first instance, to the engineers of fortifications, as was likewise the special survey and improvement of New river; after which, and before the engineers charged with thesp ecial improvement had commenced operations in the field, came the authority and means for making the general survey &c., the execution of which was given in charge to the topographical engineers.

It would seem that New river (viz.: the obstructions to its navigation,) has been surveyed under the authority granted for its improvement; but that Core sound has not been, and that the work of improvement has not been commenced at either place, but that preparations have been made towards it, and that the work of Core sound halts for lack of a survey and plans.

Both Core sound and New river fall within the line of operations of the officer charged with investigating the general question of an inland coastwise communication to Charleston; and the sound has been surveyed, and the work has been for some time past in a state of preparation, to enable him to form a general plan of improvement, and to estimate the cost of executing it, at least so far as the excavation of the channel is concerned.

The plan of improvement which he would recommend exceeds greatly in extent and expense, as has been already intimated, the improvement contemplated by the act of the 21th Congress. It is connected with a general system for the accommodation of the coasting trade of the Union in peace and its protection during war. It has been questioned by the officer in charge of this duty, whether, on the one hand, his plans should be narrowed down to the limited object which the legislature was apparently contemplating at the time of the passage of the act of 1824; or, on the other hand whether he would be warranted in proposing his plan, or whether the department would undertake its execution without legislative sanction—a project so far exceeding in dimensions and cost the one which the act referred to had indicated.

Again, it was believed that the general interior coastwise navigation should abandon the sounds, and be carried inland, at least from the waters of the Neuse to those of Cape Fear river, although apparently the legislature deemed that it might follow the line of sounds upon the coast from Pamlico to the vicinity of the new inlet of Cape Fear. At the same time the engineer was persuaded that Beaufort harbor was so important to commerce, that it deserved to be made the principal inlet to the great sounds of North Carolina, and that Core sound should be improved so as to form an important branch of the general inland communication.

Upon so serious a subject it was to be questioned whether the department would be warranted in compromitting the legislature. It is yet a question for the department how far the selection of either of these routes for immediate execution may compromit the ultimate execution of the other.

The officer charged with the execution of the surveys asks the orders of the department to authorize his reporting on any detached portions of the work.

Should it be deemed expedient to open the channel of Core sound at as early a day as practicable, in anticipation of the destruction of Ocracoke inlet, or to provide against the contingency of war, an increased appropriation ought to be asked for so as to make the fund available for the current year amount to forty or sixty thousand dollars.

Very respectfully, &c.

JAMES KEARNEY,
Lt. Col. Top Engs.

Lieut. Col. J. J. ABERT,
Chief Top. Bureau.

From the American Silk-Grower.

IMPORTANT TO SILK-GROWERS.

It gives us much pleasure to communicate to our patrons and the silk-growing public, the result of some experiments that we have made in the cultivation of the Chinese mulberry, considered by us of the first consequence. We have heretofore recommended, and now earnestly repeat the advice then given, that permanent plantations of mulberries should be managed according to the directions given in the leading article of our first number, viz.; to sever the trees near the ground late in the fall, and feed the worms with the foliage which will spring from the stumps and roots left in the ground the next season. We have cultivated the tree in this way, and can assure our subscribers, that it is attended with great conveniences and advantages, as it increases the quantity of leaves, and facilitates their gathering. We have about 1000 roots which have been cultivated in this manner, and they have prospered equal to our wishes, and more than fulfilled every expectation. The shoots are now five and six feet in height, bearing numerous large leaves, and the whole ground is nearly covered with their rich vegetation. Six, eight, and ten sprouts generally proceed from one stump, which will rise ten feet in height in one summer. By the middle of June the leaves will be large and sufficiently abundant to feed worms to advantage, and one man may, by passing along the rows with a sharp knife, cut off the sprouts near the earth, throw them into a cart, and thus collect food enough to supply a million of worms. In another month, there will be leaves sufficient to feed another crop of worms, thus doubling the profits of the business at a trifling increase of expenditure. We are not theorising, but stating what we have proved by our own experiments. The large profits to be derived from the silk culture, which have been promulgated by the press will be fully realized. This mode of culture almost demolishes the whole expense of collecting leaves, and increases the food for the worms 500 per cent. above what can be obtained from the cultivation of the white mulberry. But few of the American people have engaged in silk operations, and of these few, probably not one half of them have known any thing of it until the five last years. But small as their number is, they have effected greater improvements in the business than all the silk-growers of Europe have achieved in a century, and if we do not supply England with raw silk within 20 years, cheaper than she can obtain it elsewhere, it will be because there will be no country called America—no people denominated Yankees.

From the Mining Journal.

SMOKE-BURNER.

The following is a short description of Messrs. Chanter and Gray's smoke-burner, which has been publicly exhibited at their premises, in Earl street, Blackfriars, and inspected by their Royal Highnesses the Dukes of Sussex and Cambridge; the former attended by several Fellows of the Royal Society. It has also been inspected by many engineers and gentlemen interested in the progress of science, all of whom agreed in admitting the object of consuming the smoke to be fully accomplished. It will, therefore, really be a great neglect on the part of the Legislature, if manufactories and gas-works are longer suffered to darken the atmosphere of the metropolis with coal smoke. As to the parties interested in locomotive engines, they must decide for themselves; but if the estimate be correct, that they can obtain from coal a heat greater than they now obtain from coke, and at less than half the expense, it may readily be supposed that they will soon avail themselves of this patent.

Description of the smoke-burner.—It would be impossible to describe fully the nature of this invention within the limits of a prospectus, but it

may be briefly stated that its principle essentially consists in so arranging the form of the furnace and position of the bars that the fuel is regularly advanced by gravitation upon inclined fire bars, without the aid of machinery, or any apparatus besides the simple instruments in common use for the management of furnaces; the carbon and various inflammable gases are set free in the process of combustion, and being more charged with the oxigen of the atmosphere and heat of the fire, proceed through and over the fire, which increasing in heat to its termination, gradually subjects the less combustible gases to perfect combustion. Saving in fuel is thus effected; for, in the present furnaces, these are not only passed off unconsumed, but, by preventing the ignition of more combustible materials, necessarily waste a large portion of the burning fuel. Thus the primary effect, in the operation of the patent furnace, may be stated to be that of obtaining, at the termination of the furnace, that intense degree of heat indispensable to the entire combustion of the various substances emitted from the burning fuel. It is needless to add, that this produces extraordinary economy of fuel. This invention is exhibited in the specification in 12 different forms, showing its application to every description of furnace. The details are somewhat varied; but the most important part of the principle, namely, the absolute combustion of the vapour is thus effected in all of them.

From the Richmond Enquirer.

BRIDGE ACROSS JAMES RIVER ON THE RICHMOND AND PETERSBURG RAILROAD.

The cars have for some weeks past been enabled to come from Petersburg to Manchester; but not to the depot in this city, in consequence of the bridge over the James river not being completed. It is, however, very nearly finished—and it is said, that the cars will be able to cross it on Saturday (to-morrow) or Monday—when the distance from Petersburg to Richmond, 22½ miles, will be run in about 1½ hour. It is impossible to speak of this splendid bridge, in terms that are calculated to do justice to our feelings. We walked over it yesterday morning—and struck as we had been, at a distance, by this imposing edifice, our astonishment and delight were augmented by a more familiar observation of the magnitude of the work and the beauty of the execution. It forms not only an ornament to our city, but it does honor to Virginia—there is no edifice like it in all America. It is 2,857½ feet long, from the abutment on the Manchester side to the one on the Richmond side. The terraced bank on the Manchester side, which connects it with the heights, is 650 feet more. The bridge is 61 feet above the low water mark of the river, and 22 feet wide—with a double rail on the top of it. It stands on 18 immense piers of granite, which was fortunately so convenient to the architect—and over the piers, is a chain of double lattice work, 17½ feet from outside to outside, and sixteen feet high, resting on the piers. These sides are formed of plank, 3 by 12 inches, crossing each other about 3 feet apart, and forming diamond shaped openings. At each intersection, they are firmly pinned with oak pins two inches in diameter. These sides are secured from the weather by closely weather boarding. Upon these the flooring rests, which is 22½ feet wide. This floor is made to raise in a curve from the outer edges of the floor to its centre, in order to cast off the water. The whole is coated with pitch and sand, making it both fire and water proof. A hand-railing is placed upon the outer edges of the floor for the whole length. The whole bridge is well braced, horizontally and transversely.

Many questions have been asked—What precautions are taken against the effects of wind, of fire and decay? The first is effectually guarded against by the mass of rock-work carried up and fitted closely between the sides of the bridge, at the top of the piers. This work is composed of stone weighing upwards of a ton and a half each, closely notched into each other, and joined with iron bands. The lateral bracing will also effectually aid in preventing the effect from wind or other forces. In addition to the security against fire by covering the floor with a composition, there will be 480 buckets hung upon the hand-railing of the passage immediately under the floor of the bridge, and kept constantly filled from the city water-works. A guard will constantly be kept to pass over the bridge before and after the passage of the trains.

The main timber will be as little subject to decay as those of an ordinary frame house, the water being excluded by the flooring acting as a roof, and the weather-boarding of the sides.

The two tracks upon the flooring will have guard-rails parallel, and raised somewhat higher than the ordinary rails, to prevent the Locomotive engine or cars from being thrown out of the tracks.

The whole cost of this bridge will be about $115,000.

The whole road and the bridge are under the auspices and superintendence of Moncure Robinson esq., a native, Virginia born, engineer. Its rock work was executed by Messrs. Benj. Green and Merrill, and the wooden work by Mr. Nisbett.

We defy any one to view this noble and stupendous bridge, without admiration. It makes one's head dizzy to look down to the river below. Around are those beautiful islets, which add such a charm to the river landscape—and above and below are picturesque views of the city, of the public buildings, and the most prominent of them, the capitol of the metropolis of the state, which will tempt the citizen to make it his favorite promenade.

This railroad, thus on the point of accomplishment, constitutes a new link in that immense railroad, which is destined to run from the Highlands of Maine to the Gulf of Mexico. It immediately connects the railroad to Fredericksburg, with the Petersburg and Roanoke road. When any one asks with a sneer, "what has Virginia done for internal improvement?" we say, "if at nothing else, look at these three railroads; and look at our noble bridge."

From the Genesee Farmer.

BREEDING OF BEARS.

The *Journal des Haras*, a French publication, in describing the breeding of cattle, horses, sheep, &c., in Russia and Poland, thus describes a source

of profit but little known to the American farmer. "Some of these extensive establishments are provided with a third space, or court, enclosed by walls, and with little buildings protected by iron bars. This is destined to be a menagerie for bears of the rarest and most beautiful colors, and yielding the choicest furs. This speculation is a very profitable one. A cub of six months old with black hair pointed with silver white, yields a very light skin and fur, and which will obtain a considerable price, especially if there are others of the same variegated color and fineness sufficient to make a pelisse. A garment of this kind will sometimes be sold for $2,500 to $4,500. The skins of the old bears are employed for the carpets or linings of carriages, or the most supple of them form the clothing of the coachmen."

For the Farmers' Register.

PROCEEDINGS OF THE AGRICULTURAL SOCIETY OF NOTTOWAY AND AMELIA.

Published by request of the Society.

At a meeting of sundry citizens of Nottoway and Amelia, at Jetersville, on Saturday the 18th of August, 1838, for the purpose of promoting the improvement of agriculture in both counties,

The meeting was organized by calling Dr. James Jones, of Nottoway, to the chair, and Sharpe Carter, of the same county, was appointed secretary.

After the meeting was called to order, Mr. E. G. Boothe, of Nottoway, delivered a very handsome and excellent address, congratulating the farmers upon the increasing zeal and interest taken by them, in the improvement of their professional art, showing the value and importance of the object aimed at, the causes of the present neglected and depressed condition of agriculture, the obstacles that lie in the way of improvement, and how those obstacles and causes may be removed, to wit: By the association of farmers in every county, to consult about their own interest, which will increase their zeal, and enlighten their minds, and induce that public sentiment in favor of their profession, so essential a pre-requisite to future progress, or the obtaining of legislative aid.

After the address, it was moved by Mr. Thomas E. Jeter, of Amelia, that all persons desiring to form a united agricultural society, for Nottoway and Amelia, come forward and subscribe their names;

Thereupon, most of those present gave in their signatures.

On motion of the same, it was unanimously resolved, that a committee of seven be appointed to draft a constitution and laws for the government of this society, and Dr. Philip T. Southall, John T. Jeter, Thos. E. Jeter, and Dr. Wm. J. Cheatham, of Amelia; Col. Travis H. Epes, E. G. Boothe and S. Carter, of Nottoway, were appointed that committee.

The meeting then adjourned to meet again in the evening.

In the evening of the same day, the society met again, according to adjournment, when the committee reported the following constitution and laws, which were read and adopted by the meeting.

Article 1st. This society shall be styled "The Union Agricultural Society of Nottoway and Amelia."

Art. 2d. The object of this society shall be the improvement of agriculture, and all the arts and animals tributary to, and necessarily connected with it.

Art. 3d. Its officers shall be, a president, vice-president, recording secretary, treasurer and corresponding secretary.

Art. 4th. The president shall exercise the usual duties of his office, and enforce the rules of the Society. In his absence the vice-president shall do the same.

Art. 5th. The secretary shall keep the books and papers of the society and a record of all its proceedings.

Art. 6th. The treasurer shall collect all subscriptions, and make regular reports to the society.

Art. 7th. The corresponding secretary shall write and receive all letters pertaining to the objects of the society, keep them regularly filed, and report to each annual meeting, whatever, connected with those letters, may be important or interesting to the society.

Art. 8th. For the purpose of defraying the expenses of the society, premiums, books, agricultural instruments, &c., each member shall annually contribute not less than two dollars.

Art. 9th. Application for admission into the society, shall be made by some regular member; and the vote of two-thirds of the members present against the admission of any one shall prevent it.

Art. 10th. The president, at the opening of each meeting, shall deliver an address, or procure some other member to do it, on some subject connected with the society, or its objects; and shall appoint suitable persons, who are not competitors for the premiums, whose duties shall be to examine all animals and articles offered for premiums, and report the proper amount of premium to which each may be entitled, considering the finances of the society.

Art. 11th. No animal or article shall be entitled to a premium, unless it exhibit qualities above mediocrity.

Art. 12th. No person shall be a competitor for a premium, unless a regular member of the society.

Art. 13th. All animals or articles exhibited for premiums, shall be owned by persons living in Amelia and Nottoway, or who cultivate land therein.

Art. 14th. No animal or article shall be twice exhibited for a premium without the unanimous consent of the judges.

Art. 15th. The members shall subscribe the foregoing constitution and laws.

Art. 16th. No article of this constitution shall be altered or amended, and no new article appended thereto, except at an annual meeting, and by a vote of two-thirds of the members present.

The following is a list of animals and articles that may be exhibited for premiums, at the society's annual meeting and exhibition, which will take place for the first time, at Jetersville, in Amelia, on the second Thursday of October, 1839.

Animals.

1st. For the best stallion, considering blood, form, size and action.

2d. For the best brood mare, considering the same.

3d. The next best, regardless of blood.
4th. The best colt under 3 years, considering blood, form and size.
5th. The next best, regardless of blood.
6th. For the best mule under 3 years.
7th. For the next best.
8th. The ~~best jack.~~
9th. The next best.
10th. The best thorough bred bull, over 1 year.
11th. The next best, not thorough bred.
12th. The best calf under 1 year old.
13th. The best cow over 2 years.
14th. The next best.
15th. The best pair of oxen.
16th. The next best.
17th. The best ram, considering fleece.
18th. The next best.
19th. The best ewe.
20th. The next best.
21st. The heaviest hog under 12 months.
22d. The next best.

Articles.

1st. For the best double-turning plough.
2d. The best single do.
3d. The best large wagon.
4th. The best two-horse do.
5th. The best ox cart.
6th. The best tumbrel do.
7th. The best corn sheller.
8th. The best tanned side sole leather.
9th. The best tanned side of upper leather.
10th. The best pair of boots.
11th. The best pair of shoes.
12th. The best saddle.
13th. The best set of wagon gear.
14th. The best piece of winter negro cloth, over 20 yards.
15th. The best summer do.
16th. The best pair yarn stockings.
17th. The next best cotton do.
18th. The best piece of winter homespun, 10 yards.
19th. The best domestic carpeting, over 10 yds.
20th. The best pair of domesiic blankets.
21st. The best pound of sewing silk.
22d. The best acre of corn.
23d. The best acre of wheat.

Each article to be raised or manufactured by the exhibiter, or some member of his family.

On motion of Mr. Thomas E. Jeter, it was resolved, that four persons in each county be appointed to endeavor to induce all those favorable to the objects of the society, to join it; and the following individuals were appointed.

Nottoway.	*Amelia.*
E. G. Booth,	Dr. Wm. J. Cheatham,
S. Carter,	John T. Jeter,
Col. T. H. Epes,	Dr. Philip T. Southall,
Wm. R. Mills,	Peter Burton.

On motion of Mr. E. G. Booth, it was resolved, that the secretary furnish an account of the proceedings of this meeting for publication in the Farmers' Register.

The following officers were then unanimously elected for the year 1839. Col. Thos. W. Webster, president, E. G. Booth, vice-president, S. Carter, recording secretary, Col. T. H. Epes, corresponding secretary, Thos. E. Jeter, treasurer.

The meeting then adjourned.

JAMES JONES, *President.*
S. CARTER, *Secretary.*

LARGE LEAVES OF THE NATIVE MULBERRY (MORUS RUBRA.)

At page 275, some remarks were made on the usual delusive manner of comparing the size of the leaves of the Chinese mulberry with other kinds. We there stated that the leaves of the young native mulberry *(morus rubra)* were sometimes found of very large sizes, though the same trees, in their more mature state, would bring leaves of but ordinary size. The correctness of the sizes there stated rested upon memory only; and lest there should be some error, we have since sought an opportunity to test the facts by other and careful measurements. This opportunity was afforded a few days ago, in finding a young shoot with very large leaves, on Coggin's Point farm. It grows on one of the steep hill-sides which inclose a deep and narrow ravine. The land is covered with its original forest growth, and the young mulberry tree is over-shadowed by the neighboring large trees. The soil is not very rich, but is highly calcareous, being in fact the out-cropping of a bed of weak sandy marl. If cleared and cultivated, this part of the ground, while in its best condition, might bring five barrels of corn to the acre. It is evident that these were not the most favorable circumstances to produce the most rapid and luxuriant growth of a young tree so situated; and that if it had been on the richest soil, well cultivated, and not affected by the shade or growth of neighboring and larger trees—or, in other words, if it had been nursed as carefully as the Chinese mulberry usually is—that the growth would have been ranker, and probably the leaves would have been larger than the actual sizes, which will be stated below, and of which the actual specimens are preserved, of the four largest leaves measured.

No. 1, was 14¼ inches long, measuring from the junction with the stem, to the upper point of the leaf, and 9⅞ inches wide. Measuring by the longest straight line, which was on one side of the stem, the length was 14¾ inches.

No. 2—Length from stem,	12⅛ inches
Length by longest straight line,	12⅜
Width,	9½
No. 3—Length, (longest straight line)	13⅜
Width,	9⅜
No. 4—Length, (from stem)	13½
Width,	9¼

None of these leaves were lobed, (or cut out,) but were compact in form, and regularly rounded in general outline, except that the apex, or extreme upper point, of each was very narrow, and was from an inch to an inch and a-half long.

Of some of the leaves of each of the plants grown from seeds of the *morus multicaulis*, (described page 316,) we have made *fac-simile* representatives, by inking carefully the leaf, and taking the impression under the printing press. Of these copies the sizes of some of the largest are as follow:

Seven lobed leaves from different plants, measured—

Length	8¼	inches,	Width,	7¼	inches
"	8⅝	"	"	7¾	"
"	8¼	"	"	7⅛	"

Length	8¼	inches,	Width,	6½	inches
"	8⅝	"	"	7½	"
"	8¼	"	"	8¼	"
"	9⅛	"	"	8⅛	"

Four leaves not lobed, measured—

Length	6½	inches,	Width,	5¾	inches
"	7⅛	"	"	5½	"
"	7⅝	"	"	6½	"
"	7¼	"	"	6¼	"

The length of each was fixed by a straight line from the point of the leaf, to the junction of the leaf and the stem. The longest line, would have been to the shoulder of the leaf, and would have exceeded the central lines by from half an inch to nearly an inch. These leaves will compare well in size with any of the new varieties (except the *multicaulis*,) which have been so much puffed in nursery-men's late advertisements. Any one of these seedlings would serve, with good puffing and good luck, in skilful hands, as a stock in trade from which to sell some thousands of dollars worth of cuttings. Each one is the only individual of a new variety—its qualities totally unknown, and therefore may be announced as whatever the seller pleases—and there is no knowing how much profit may be made of its product, before it is sufficiently tried by purchasers to be known, and properly appreciated. If any one in the humbug line wishes to avail of such a chance, we will sell him our seedlings for $20 a-piece, and ask no questions. Along side of the row of seedlings, and at about three feet distance, is a row of young *multicaulis* trees, which have been treated precisely in the same manner. An impression of one of the largest leaves of these was taken, for comparison, which measures 10¾ by 9¼ inches.

From the (British) Farmers' Magazine.

DEEP PLOUGHING—TREADING IN SEED.—EATABLE PRIZE ANIMALS.

On Mr. Barker's health being given from the chair, this gentleman returned thanks, stated the great improvement in ploughing, which had resulted from the distribution of premiums, at ploughing matches, and which had amounted to £40, and after referring to other local improvements, he proceeded to say—

"I will detail to you an experiment, which I made last year in deep ploughing. I felt at first inclined to try the press, but some said try the drill, some the broadcast, and at last I selected the drill, and had the seed trodden in by my Lord Lordsdale's horses, when they were at exercise, and afterwards had a flock of 400 or 500 sheep driven over it. The produce of this land averaged seven quarters (56 bushels) and one peck an acre throughout 22 acres—(the total product amounting to £402 3s. 9d. = to $1,785, or $81 the acre,) and from two bushels and one peck of seed per acre sown; and I wish you would try the experiment of treading in the wheat, or fixing it firmly in the ground, which I am sure will lead to a similar result. As regards the exhibition of animals, I think we are still wrong in principle, and in endeavoring to produce so much fat. If we paid greater attention to the increase of *eatable flesh*, I am certain a great improvement might be effected, especially in the quality of Leicestershire sheep and pigs. When our prize animals are killed, what do we find? Why perhaps five or six inches of fat to one of lean. I intended, another year, to offer a premium for that animal which, when dead, shall show the most *lean*, and I hope that some one will offer a similar pig premium. I must beg you to take my hints about fat and lean into consideration, and see whether we cannot produce a greater quantity of *eatable meat*, than we have hitherto done."

From the Genesee Farmer.

SHEEP WORM.

There is a fly that deposits its eggs in the nostrils of sheep, usually in August and September, where it hatches, and then makes its way up into the head and often causes death. The frequent application of tar to the noses of sheep, is considered the best preventive. Put tar on boards and strew on salt, and the sheep will smear their noses with tar in eating the salt. The following method is recommended by some sheep master. Take a small log, dress it a little upon the upper side, bore holes into it with a large auger at short intervals, about two or three inches deep, fill these holes with salt, and with a brush apply tar as often as once a week around the holes, and give the sheep daily access to the salt. A small quantity of tar frequently given to sheep is considered conducive to their health. Alexander Reed, esq. of Washington county, Penn., observes, "we have long been satisfied that the use of tar as a medicine or condiment for sheep has not been duly appreciated. The cough and foul nose, I am disposed to think, are both produced from the same disease. When we notice them we lose no time in removing them from the flock, *and make a free use of tar*. It rarely fails to effect a cure in a few days, unless the animal is old or unsound."

ON THE SUGAR AND COTTON REGIONS OF THE UNITED STATES.

To the Editor of the Farmers' Register.

Alabama, August 16th, 1838.

I propose (as an inquiry of some interest) to give some general views of the most suitable regions for the profitable culture of cotton and sugar, and, incidentally, of corn and potatoes, wheat and the small grains. The sugar region may be considered from towards the equator to latitude 31°. The cotton from 31° to 35°. Corn, wheat, and the grasses, from 33° to 40° and beyond. A correct comparison of the profits of each, in their most suitable situations, will approximate them much closer than on a superficial view might be thought. I shall commence with the cotton region, as that with which I am best acquainted; and be more full on it, as my own opinions are at variance with what I believe the general opinion. That opinion is, that cotton will not be a productive crop below 31°, whenever it shall be the general crop of the country, and that beyond 35°, the climate is too cold for it. Suitableness of soil and judiciousness of cultivation combined, may make some exceptions; but it will be found generally correct. Light and free soils, in Virginia and North Carolina, above 35°, may make it occasionally the interest of the proprietor to cultivate cot-

ton; but he must connect with it something else for market: for he cannot make one half as much cotton as an equally judicious planter, on an equally fertile plantation, under the best location as to climate. But why should this be so? Why, because the stalks will not produce so much; but the principal reason is, that the early frost does not as with us merely kill the leaves and tender limbs, and check production, but it kills the plant entirely, and all its sap, and sours it, and the wool dies, and loses its elasticity, and dries, and becomes very much lighter. It is difficult to say what is the loss in weight, and I have no means of correctly ascertaining. I feel very certain, however, that the loss is more than one-fifth, and, I believe, more probably one-fourth, where it remains in the field the usual time necessary in a good crop. When the stalk is dead entirely, the wool loses its vegetable oil, its weight, and its elasticity, and the trash adheres to it, so that it picks clean with difficulty. We know this so well here, that on the rusted parts of our fields, where the stalk is dead and dry, and all the leaves gone, notwithstanding a fine show of wool, it is passed over unpicked, where the crop is a large one; and the laborers seldom get half weights when they do pick it, though their baskets are nearly as full. It is usual to weigh in the cotton as it is gathered; and if we get one pound of clean ginned cotton to every five, we do well; and we know that dried seed cotton will give one pound for every three. Some allowance is to be made for the wet from the morning dews; but still much arises from the drying of the oil out of the cotton fibre. It dries much faster, of course, in the field exposed separately to the sun. When it has been long so exposed that all the oil is gone, the cotton becomes blue; and it is equally so where the cotton pod stands too high on the stalk to be affected by stains from the earth.

Another reason—we begin earlier to pick, and can continue to pick later in the year. We commence about the 20th of August, and in 35° they commence about the 10th of September; and that difference of time, when the cotton is heavy, and the days are long, is good for 400 to 500 pounds of clean cotton, or one bag to each laborer. We can and do pick more where the climate perfects the pods, if these fully open and eject the whole, or yield it to the slightest touch of the picker. Crops vary from 1500 pounds to 4000 pounds of clean cotton to each laborer; and I suppose them to range in 35° from 1000 to 1500 pounds. To speak of averages, I would say, in 35° the crop should be 1000 pounds, in 33° and thereabouts, 2000 pounds, both under reasonably fair circumstances. 3000 pounds and upwards have been but very rarely gathered without much additional assistance. I do not consider it difficult to grow that quantity on a really fine plantation; but I think it impossible to pick it with the same persons only that made it. I have seen 40 acres of unpicked cotton ploughed up in March, that would have given 1200 pounds or 1500 pounds of seed-cotton each acre; and the gathering, with much assistance, did not reach 3000 pounds to the hand. I therefore am incredulous as to these great gathered crops.

So much for the unsuitableness over 35°. Now let us inquire into the reasons why it should be so under 31°. I have supposed, that in northern latitudes plants depend more on the soil, and in the southern more on the climate. In the former, there is a general tendency to bear fruit; in the latter, wood and foliage: and that latitude is best where their mutual action best suits. Below 31°, the fruit-bearing tendency is overcome too much by wood and foliage. You must have a reasonable size of stalk, to have abundance of fruit; and the fruit-bearing tendency must not be too little. Another reason may be, that without a winter severe enough to destroy the larvæ of insects, you are more liable to their depredations. I do not know that I make myself understood; my reasons are but speculations, and are not very satisfactory to myself, and will probably be less so to you. In the warm climate of the West Indies, cotton was much more grown than it now is. Of South America we know too little to seek for examples either way. Formerly it was very much and profitably cultivated on the seaboard of South Carolina and Georgia; it is at this time very little cultivated. It has been rather a poor product in Florida, and is each year getting more so. It runs too much to weed, and the ravages of insects have increased. I shall adduce two strong facts from this and the adjoining state of Louisiana, and which first led me to this opinion. In 1819, a large and very fertile body of lands on the Escambia, just above the West Florida line, above and near latitude 31°, was settled by several of our very best farmers, and their crops, for several years, were large and remunerating. The general cultivation of that neighborhood, and its continuance, have occasioned the plant not to yield so well, though still exuberant in its growth; and it has introduced insects, that have preyed so much on their cotton, that almost every one of those planters has left that neighborhood and gone higher up into the country. The crops above 31° in this state, are less productive, and more injured by worms, than formerly.

The second is, that cotton, below 31°, is no where now cultivated to any extent. The fertile banks of the Mississippi, from the Balize to 100 miles above New Orleans, has but very few plantations where cotton makes any portion of the crop. It is a fact, to the notoriety of which I appeal, that it is considered there unsuitable for cotton. A more fertile soil, or better fixed plantations, or better cultivators on them are to be found no where. On the same river, from about Natchez, in, and upwards, it is a superb cotton country.

It is said Texas is a fine cotton country. This is rather an expression of an opinion of what it will be, than what it is. It has not had time to establish its exemption from what has been the fault of all the countries under a similar climate—that its cotton will grow too much to wood and foliage, and that it will be depredated upon, too much, by worms and insects. I allude to the seaboard of Texas. It is the true sugar region, (and the indigo country, for the same reasons,) and that in time, will be its staple product, so soon as the security of the government and the inconveniences of a new population, and a new country, shall overcome the prudence and caution of the more wealthy planters elsewhere. My paper and your patience are both about to give out, and I must be brief on the other topic, and exclude the last altogether. The sugar region, I consider below 31°, where the climate is very hot; the cut cane

acidulates, heats and rots, and, therefore, you must haul as you grind. In Louisiana, on the approach of frost, you may cut a three weeks' supply, and will make sugar without rot, and without acidulation. In the United States, there is properly no sugar country; the plantations on the seaboard, beyond and on the Mississippi, to the parallel of New Orleans, can only, and can scarcely be called such. The crop is a hazardous one, and the sugar interest is a debt; it is a forced crop, and the mode of cultivation of the best planters shows it. They push the early growth, and drain well to keep from the cold occasioned by the transpiration water, through and under their levees, the river being then generally higher than the surface of their cane fields. Cane planted in October, is better than in the spring. The cane requires a strong soil and a long season, to give the maturity, and that degree of richness or saccharum to the juice, that makes the sugar. New land and late canes give equally large stalks; but the saccharum is not there, and sometimes so deficient, that it will only make molasses. Where, above New Orleans, sugar is successfully made, as in the La Fourche, the Terre Bonne, &c., there the soil is very free, and hastens the maturity. As I have said before, the true sugar country is Texas; and when society and security, and health and good government, shall have overcome the caution of the more wealthy, it will be a splendid country, and the future El Dorado.

A PLANTER.

From the Edinburgh New Philosophical Journal.

ON THE FROZEN SOIL OF SIBERIA.

By Professor Baer of St. Petersburgh.

It has long since been ascertained, says M. Baer, that over a great extent of country, the soil of Siberia is never entirely free from ice; during the summer, the surface of the ground is, to a greater or less depth, thawed; but at some distance from the surface, a bottom of perpetual ice is met with. Gmelin, the elder, in his travels in Siberia, states that shortly after the foundation of the town Yakutzk (in latitude 62½° north; longitude 130° east nearly,) at the end of the seventeenth century, the soil of that place was found to be frozen at a depth of 91 feet, and that the people were compelled to give up the design of sinking a well. Many other facts of this description were collected by travellers about the middle of the last century; but these facts seem not to have been generally credited; and even in 1825, Leopold Von Buch, a philosopher, whose opinion is of the greatest weight in all questions connected with the physical condition of the globe, rejected these statements as entirely erroneous; yet they have been corroborated in our days by the travels of Erman and Humboldt. Until very lately, nothing was known respecting the thickness of the frozen surface; but within these few years a merchant of the name of Schargin, having attempted to sink a well at Yakutzk, was about to abandon the project in despair of obtaining water, when Admiral Wrangel persuaded him to continue his operations till he had perforated the whole stratum of ice. This he did, and kept a complete journal of his work. The well, or pit, of M. Schargin had been sunk to the depth of 382 feet, and at that distance from the surface, the soil was very loose, and the temperature of the earth ½° Reaumur, (31° Fahr.,) but nearer the surface it had been much lower, and had increased as follows: Reaumur, 6° at some feet below the surface; 5° at 77 feet; 4° at 119 feet; 2° at 217 feet; 1½° at 305 feet; ½° at 350; ½° at 382 feet. As the soil had already become loose at 350 feet, and as the aperture of the well was eight feet square, and the work carried on partly during winter, when, of course, the column of cold air must have rushed into the pit and chilled the temperature, it is probable that the spot at which the thermometer marked the freezing point, was at the depth of 350 feet. This immense thickness of ground ice would prove that Siberia must have been for a long period in the same physical condition as it is at present. In the actual state of our information on this subject, it is impossible to determine how widely this layer of ground-ice is spread under the surface of Siberia; yet we know enough to say that it extends over an immense tract of country. Humboldt found the soil frozen at a depth of six feet at Bosgolowsk, near the Ural, in 60° north latitude. Near Beresow, Erman found the temperature of the earth at a depth of 23 feet, still +1°.6, (35½° F.,) but in 1821 a dead body was disinterred, which had been buried 92 years before; the earth around it was frozen, the and body did not show any signs of decomposition. It has long been known that at Obdorsk, in north latitude 68°, the ground is always frozen. Near Tobolsk, no ice is found in the soil, but as we proceed to the eastward, the ground-ice advances farther north. It is to be hoped that measurements of the temperature will shortly be made at different depths at Yakutzk, and by methods which M. Schargin was unable to employ; also it is desirable to institute an inquiry as to the depth at which the ice annually disappears near the surface, and collect information on the depth of ground-ice generally in Siberia. It would also be highly gratifying to me, and extremely interesting to science in general, if the Geographical Society of London, would collect information respecting the extent of the layer of ground-ice in North America, the thickness which it attains, and how much of it disappears by the summer heat, in those countries over which the factories of the Hudson's Bay Company are disseminated. At the termination of the reading of this paper, an animated discussion took place on the frozen soil of Siberia, in which the members stated their views on the subject. It appears to be generally considered, that the experiment at Yakutzk had not been made with sufficient care, to authorize the belief that the frost penetrates to so great a depth as 350 feet below the surface of the globe; also that the statements of M. Arago and Von Buch, and others in our own country, on the increase of temperature in proportion to the distance from the surface, were fully borne out by the observation of M. Schargin; and almost exactly in the same ratio as hitherto found. Captain Back stated, that in his many years' experience in the cold regions of North America, even in the height of an arctic summer, he had never found the ground thawed more than four feet below the surface; but that experiments on the subject were much to be desired.

From the Farmers' Cabinet.

MILCH COWS.

The attention of farmers is invited to the consideration of the character and condition of our milch cows.

How much ought a cow to yield to be worth her keeping? What is the average time that our cows are in milk? Is there much if any waste of fodder among us by keeping cattle that yield little or no return of profit? Questions like these, and there are many such, ought to be put and answered: it may turn out that our dairy stock is extremely low in character, and its management wasteful.

If something like an average quality of milch cows could be settled to afford a standard, and it should be understood that no good farmer would keep an animal for milk that fell below it, all the cows in the country would soon come up to the standard and go beyond it.

A milch cow of *medium* quality, in this state, will give, it is supposed, 12 quarts of milk per day for two months after calving, and 7 quarts per day on grass for the next 4 months, and 4 quarts per day for the following 2 months, and perhaps two quarts 1 month longer. Altogether 1500 quarts, in a year.

It takes 9 quarts of milk to make a pound of butter, and 4 quarts to yield a pound of cheese. The skim milk and dairy whey may be valued at $3 a cow per annum.

Now a cow that gives 1500 quarts of milk in a year, produces 166 pounds of butter, worth 16 cents per pound, $26 55
Skim milk say 3 44

$29 99

Or 1500 quarts of milk will give at four quarts to the pound of cheese, 374 pounds, which at 8 cents per pound will be $30 20
Whey, say 3 00

$33 00

Nothing is said of the worth of the calf, as all the milk the cow gives is credited. A milch cow's keeping one year cannot be short of $25 in the interior.

Suppose a farmer to resolve that he would keep no cow that did not hold out a good milker, 9 months in the year—and that did not give 16 quarts of milk per day for two months after calving, and 12 quarts per day the next four months, and six quarts per day the next three months, and two quarts per day the month following. Such a cow would yield per annum 3000 quarts of milk.

Here it may be remarked, that with the addition of five dollars per annum to the cost of food estimated for a cow, the net profit would probably be four-fold.

Is it not practicable to have throughout the country, as common dairy stock, animals as good as the last described?

This question is submitted to farmers for consideration. The probability is, that in taking some pains to get stock as good, they would get even better.

If the various modes of obtaining this object were resorted to at once with zeal throughout the country, there would be a prodigious improvement in a very short time. No young animal of promising appearance for milk would go to the butcher. More care would be taken of young stock. More young stock would be retained to insure a better selection for milch cows. Farmers would think more of the advantages of employing bulls of the improved breed. Heifers would be milked with great care and very thoroughly, to get them into the habit of holding out longer as milkers. If they once dry early, no care and keeping will afterwards correct this fault. Heifers with the first calf will be fed well, and with some additional care, the last three months they are in milk, to make them hold out.

The profit of a milch cow is not generally understood. Milk is not only the most nutritious, but the cheapest article of food. The food necessary for a cow in full milk, does not exceed in price, one-third of what is necessary in feeding for the butcher.

These few remarks are hastily made to draw out farmers on this subject. There is a great deal to be said upon it, and a great many facts to the purpose, which should come to light.

MEMORANDA OF LIMING. PROPOSED LEGISLATIVE PREMIUM.

To the Editor of the Farmers' Register.

Charles-city County, August 15, 1838.

In my memorandum book I find the following sentences, which, if they will be of any use to those who are using calcareous manure, or beginning to do so, they are very welcome to them.

I commenced the use of lime in the year 1823 at Weyanoke; put on at the rate of half a bushel of burned shells to every 18 feet square; do not think I ever had any increase of the corn crop the first year; have observed it always looked greener. Never failed in a crop of clover on limed land, no matter how poor, or how much galled or gullied. The most benefit ever received from liming, was on a broom-straw old field; first burned (the straw) then limed before ploughing, at the usual rate. Suffered to grow up again in broom-straw; ploughed in the spring and suffered to remain till the fall; fallowed and put in wheat; (a poor worn-out reddish soil, rather sandy;) it produced 15 bushels of wheat; a fine crop of clover succeeded—then wheat (lost by rust)—corn, a fine crop, about 6½ barrels; (wheat entirely destroyed by the previous winter;) clover, a fine crop; wheat, 26 bushels to the acre; now in corn of an unusual large growth, much affected by the present drought, but will, I venture to say, produce between 5 and 6 barrels of corn; a good season would produce over ten; has never been manured; plastered once in the spring, the year after it was limed. Have been in the habit every year of mixing lime with manure, always with increased benefit. For the last four years have used marl in that way. I believe one hundred bushels of marl, such as is got from Cabin Point, or Coggin's Point, will do as much permanent good as 300 put on alone; it ensures a great growth of clover, and I think the sooner the vegetable matter is applied after the application of the calcareous matter, the greater, quicker, and the more permanent the advantage to be derived.

On an acre of land, in a field I have limed of 150 acres, I put one peck of lime or burned shells

to the 18 feet square; on an adjoining acre I put one bushel to the same area, marked with cypress shingles; have never been able to discover any difference. The field has been in corn twice, in wheat twice, oats once, and clover twice since. I have showed it to a number of gentlemen. I have limed different pieces of land, twice for four years in succession, putting on the same quantity as at first; have never seen any advantage resulting to the crops. I think the use of lime has lessened our liability to autumnal diseases. On all crops lime is beneficial the second year; oats and peas, I think, it improves the first year. One hundred bushels of marl with the quantity of manure necessary for turnips, on one and a half acre, will produce twice as many as the same land with the manure only; the marl to be well incorporated with the manure, and mixed some 4 or 6 months previous. This mixture is the finest manure for celery; renders it sweet and very tender, increases the growth one-third.

I have put lime on the surface, harrowing it in only, ploughed it in with small ploughs, with four-horse ploughs, and at all seasons of the year; have never discovered any material difference; concluded it was only necessary to use it, no matter how, where, or when, and the tide-water region of the Old Dominion will rise, phœnix-like, with increased health, and wealth. Already has our assessor, Mr. William Tyler, affixed nearly one-third on the value of my land since the last assessment; and I assure you he is a judge in those matters, being one of our most intelligent and successful farmers, and one who has been intimately acquainted with my lands his whole life. As this is an instance of advantage to the state, and there are twenty such other cases in this county, would it not be advisable that the legislature should offer a premium equal at least to the increase of the amount of taxation for calcareous improvement of every ten, twenty, or one hundred acres? In twenty years, I would lay a wager, no farmer in the marl and lime regions of Virginia, would have a note in any bank, or any other note which he would not be able to liquidate at maturity. And it would do more to lessen the necessity of banks than any other law they could pass, for the very reason that farmers would have no necessity for them; and being able to be always punctual in their payments to merchants, it would lessen very much their (the merchants') demands on the banks.

JOHN MINGE.

From the Farmers' Cabinet.

DESTRUCTIVE INSECTS.

Not only thorns and thistles, but hosts of noxious insects have been inflicted on degenerate man. My attention has been chiefly directed against the latter evil.

The character of some of these insects will be described in treating of my warfare against them.

The Peach Insect.—The first in my series, is probably of American origin, as in no system of entomology can I find a description of the insect which has proved so destructive to our peach trees. I have to rely on my own observation for its history and description. It was probably unobserved by us prior to the present century.

In the autumn of 1800, I first saw the fatal malady in the peach trees about Philadelphia; the next year it had reached Burlington, and thence continued its march northward about twelve or fifteen miles a-year. In 1807, in a choice collection of fruit of my own, every tree had the premonitory symptoms of the yellows: a few miles north escaped that year. Having made a careful dissection by splitting and barking several trees, I could discover no cause, but ravages of the worms between the bark and wood. Collecting a number of the worms, I confined them in glass and hatched from them the perfect insect; moth or miller, small in comparison with the worm; white or light gray, with dark spots, wings convolute, like the section of a crow-quill split longitudinally. This phaleua or moth lays its eggs on the leaves of the peach tree; when hatched, the larva or maggot subsists itself first on the leaf, until it has acquired sufficient size and energy to migrate to a more suitable and permanent home for winter: this is between the bark and wood of the tree near the ground. Here it enlarges its domicil; a sickly state of the tree follows, and if they congregate in sufficient numbers to circumvent the tree, certain death is the consequence, by intercepting the communication between the root and body of the tree.

The larva of the peach insect is herbivorous, and in this state of existence subsists on the tender lining of the bark; living in a cleanly manner, it deposits all filth outside the door, by the dark powder appearance of which its abode may be detected. In its chrysaloid state, its appearance is smooth and glassy. It frequently happens when seeking these worms, a chrysalis very different is found; this is the sirex or tailed wasp, the natural enemy of the peach worm, the sirex is a restless, fidgety insect, resembling the wasp; its young, like that of the other wasps and hornets, is carnivorous. It may be observed about the neighborhood of the peach worm's habitation, at the door of which it lays its eggs; the product, a worm, creeps into the bowels of the peach-worm, feeds on its carcass, and occupies its coat. Its chrysalis, unlike that of the peach-worm, is rough and filthy, caused by the sweat and writhing of the victim of its rapacity.

I have been thus particular in noticing the sirex, because, being a usurper of the abode of its foster parent, it has been falsely accused of being the mother of mischief, instead of a friendly ally, which should be patronized. Among others, the Sussex New Jersey Register, had, about six years ago, a belligerent article against this supposed enemy.

Knowing that, even in a moderate degree, *heat* proves fatal to the cut-worm, I was led to try its effect on the peach-worm; having placed several in the hollow of my hand, I found that water not uncomfortable to my skin, killed them. I thence commenced applying boiling water from a watering pot, (without the nose,) pouring it around the tree, about 18 inches above the ground in sufficient quantity to heat the bark; the quantity was varied according to the thickness of the bark and size of the tree; this proved completely successful for several years, and as long as it was continued.

The time for using the heat, was the last of summer, and again the middle of the autumn, lest some might have escaped or more recently arrived.

The Cut-worm.—This is the offspring of the *phulana devastator;* wings horizontal; white with

small dark spots; under wings orange; conceals itself from the sun during the day; lays its eggs near the root of grasses. These worms are of a bluish color, and they travel only in the night; they cut off young cabbages, beans and corn; the latter injured but not destroyed by them.

To shun its depredations in gardens, be careful to plant at a distance from any grass plot or lawn. I have lost an entire crop of late-planted beans by them, by planting near a grass plot. Frequent superficial hoing, in the middle of the day, by exposing to the sun, proves fatal to many of them.

Turnip fly, is another familiar enemy. I have witnessed many a crop of cabbages and cauliflower plants, also melons and cucumbers, destroyed by these minute insects. To obviate this, on the first mentioned small seeds being sown, I have wetted the ground to the depth of an inch or more with boiling hot water, thus destroying the flies and their eggs, and at the same time expediting the germination of the seed. For melons and cucumbers I sow and rake radish or turnip seed, on and around each hill; the flies are attracted by these, their more favorite food, from the melons, &c. Against the striped bug, another destroyer of melons, a brood of young chickens is a sufficient protection for a whole garden.

I do not persume to think the above the only or best means of abating the evils we suffer from insects; my object is rather to elicit from others the result of their observation and experience; the subject, in my view, is important. Has any one, more fortunate than myself, discovered the insect, for insect it most probably is, that produces the deforming warts and threatened destruction of our plum trees?

A knowledge of the agent might lead to the means of counteracting the influence. May we not hope that some means may be discovered for palliating the impending evils from the wheat insect, by fire or smoke of some offensive kind, as of horns or hoofs of animals, made in the evening, at a particular stage of the opening ear. Many remedies and some of much practical utility have been suggested against the Hessian fly. We ought not to submit to nor look lightly on these pests.—Ants, insignificant as they appear in our view, have been suffered to multiply to such an extent on the island of Granada, that a premium of £2,000 sterling has been offered from the public treasury, for the best plan of their destruction. Poison and fires are employed.

Let us exert our energies against the whole race of these *destructive insects;* let us devote a few hours each year to this warfare, and although we may not gather laurels, we shall assuredly reap a rich bounty. SENEX.

Kinderhook, March, 1836.

BULLETING AS A SUBSTITUTE FOR SPAYING.

[At page 285 of this volume we republished an article in recommendation of "bulleting" as a substitute for spaying. The following extracts, from another and more recent source, serve, the one to contradict, and the other to leave questionable, the utility of the substitute before proposed. But in addition to this ground of value of the letter of Mr. Smith, it deserves republication, with marked commendation, as exhibiting the rare merit in a writer of coming forward, voluntarily and readily, to confess that he had been in error in a previous communication, and that under that error, he had been aiding to deceive, when he meant to instruct his brother farmers. Many, in due time, have discovered that they had previously published erroneous opinions; but few have enough moral courage and sense of duty to make the proper atonement.—ED. FAR. REG.]

From the Franklin Farmer.

Midway, Woodford Co., Ky., Aug. 15, 1838.

Dear Sir—The object of writing communications for the public should be to diffuse useful information, and they should, therefore, only convey *facts*. Errors which are likely to have an evil tendency, should be corrected. False theories and half-tried experiments, though frequently promulged from the purest motives, often do great injury; and yet to hold the secret possession of facts, hoarded up for the purpose of selfish emolument, without regard for the good of others, is mean and selfish in the extreme. Taking the position, that it is the duty of every one, to do as little harm and as much good as possible, I hasten to correct, and thereby counteract the evil effect that might be produced in consequence of a recommendation which I made, of bulleting sows instead of spaying them, under the signature of "Woodford Farmer." Although Mr. Davis was successful, in his first operations, others have been unsuccessful, and I have undoubted authority to state that bulleting *will not answer* as a substitute for spaying, which, in justice to myself, as the author of that recommendation, and for the public good, I hereby make known the facts as communicated to me.

BIRD SMITH.

Remark.—We have known bulleting to succeed well. It would be an inquiry well worthy of attention, to ascertain the circumstances under which bulleting, as a substitute for spaying, both succeeds and fails.—*Ed. Fr. Farmer.*

From the Franklin Farmer.

RENEWING OLD HANDSAWS.

I am in possession of an improvement which, if you think worth communicating to the mechanics and farmers, is at your service. In the year 1813, in Harrison county, Ky., I had a very fine handsaw, which some of my apprentices rendered unfit for use. She had what is termed by mechanics, a spring or broken back, or joint in her, and was thrown by. I tried several experiments to remove the spring and at last fell on the following plan:—I took a blacksmith's hand-hammer with a smooth face and laid the saw on a smooth anvil, and hammered it lengthwise where the spring or joint seemed to be. I hammered it in the centre of the width, which removed the joint, and she was straight and stiff as ever, and was no more liable to have a spring or joint than any new saw, and performed as well as usual. If the hammer and anvil are smooth, no one will ever observe that it has been done. I have straightened a

great number of useless saws thus and made them good as new, and have communicated this method of doing it, to many of my brother mechanics in Kentucky and other states. And now, as a mechanic and farmer, have thought for several years of having this information published to the world, for there are thousands of handsaws thrown aside as useless, for want of a knowledge how to restore them to usefulness.

J. H. WENTWORTH,
Millwright of Kentucky.

From the New Hampshire Silk-Grower.

PROFIT OF DEAR LIME USED AS MANURE.

Mr. Cooke—You requested me to be more particular in relation to my experiment with lime in growing wheat.

The cost of lime in this vicinity is from four dollars to four dollars and a half per cask. I obtained mine by going to Weathersfield with my own team for it. It costs from a dollar and a half to two dollars per cask at the kiln, with the cask. or fifty cents less without.

My mode of applying it in compost was as follows:—Having a quantity of meadow mud, chip manure, &c., on hand, I put a layer of that three or four inches thick, then a layer of unslacked lime, of perhaps an inch in thickness, then another layer of compost, and so on alternately until my lime was all worked up. It remained in this situation a week or two, until the lime was completely slaked by the moisture of the compost, when it was shoveled over and thoroughly mixed. It was then applied to the land; ploughed in and well mixed with the soil by harrowing.

How much of the crop should be attributed to the lime, I know not, but am of opinion that enough to pay the extra expense was obtained in consequence of using it—so that if it benefits the land hereafter, it will be net gain. I am decidedly of opinion that it is better to apply it in compost than any other way. I tried various experiments with slaked lime as a top-dressing, without any apparent effect.

I have used lime but one season, and that an unpropitious one; perhaps further experiments will modify my present opinion of its utility, as well as of the best mode of applying it. In that case you may expect to hear from me again.

J. K. SMITH.

Dublin, January 1st, 1838.

SEEDLING CANTON MULBERRY TREES.

To the Editor of the Farmers' Register.

Georgetown, D. C. Sept. 1st, 1838.

I send you above, an impression from a leaf of a new variety of mulberry; it is not so large as the leaf of the *morus multicaulis;* but I think thicker and softer, and will prove, I have no doubt, a valuable acquisition. I procured last winter, through the department of state, a pound of this seed, from the consul of the United States, at Canton, China—represented by him to be the mulberry most esteemed in that country, for feeding silk-worms. I had not much confidence in it, as I had heard and seen so many statements, that good kinds of mulberries could not be propagated from seed, or that they did not follow their kind. That doctrine may be true generally; but this plant is an exception, as they are all alike, as far as I can judge—though some are very tall and thrifty, and others, where they stand very thick in the seed beds, are low and delicate. The leaf of which an impression is annexed, is from a plant about three feet high; and there are thousands in the beds as good.

They have in Northampton, Massachusetts, a variety they call the Canton mulberry, more esteemed there than even the *multicaulis.* I know not whether mine be the same; but it certainly bears a larger leaf than any mulberry I have ever seen except the *multicaulis,* and much resembles this latter in so many particulars that I think it is probably the original tree from which the *multicaulis,* by artificial means, has been produced. These seedlings have withstood the heat and drought of this scorching summer, better than any thing else in the garden. I would sell a few thousand of them. Very respectfully, your obed't. servt.

J. MASON, Jr.

[The impression of the leaf is 6⅞ by 5⅝ inches, and not lobed. We have never seen any of the Canton mulberry trees of Northampton; neither that of Dr. Stebbins (described by him at page 257 of Farmers' Register,) nor Mr. Whitmarsh's famous "Chinese mulberry" seedling; and if it were otherwise, the identity or difference could not be pronounced upon, merely by comparison with the picture sent. But the description given by Mr. Mason, seems to agree very well with that of the Canton, as given by others. The reason why the latter is preferred in Massachusetts, is not because of its superior value, but because it is more fit to withstand the rigorous climate of that region. It will scarcely be preferred in any place where the *multicaulis* will grow well and safely. Though we have no faith, in general, in the seeds of any mulberry bringing with certainty the same variety as the parent tree, we admit that Mr. Mason has good ground (in the similar appearance of all the plants,) for considering that his kind is an exception to this rule. He is mistaken in supposing that the leaves of his kind are the largest of any except the *multicaulis.* This will be evident to him on referring to a piece in a previous part of this number, (at page 417,) in which the sizes of leaves of the native mulberry, and also of sundry seedlings, are stated.—ED. FAR. REG.]

From the Franklin Farmer.

HOES.

Many of our most thrifty farmers of the east grind their hoes, and take a file to their fields with them to sharpen them when dull, with as much regularity as they take a whetstone with them to the meadow. Those who have never used a ground hoe would be astonished at the comparative ease and expedition with which he can prosecute his work with that useful little implement.

SILK CULTURE AND MULBERRY SPECULATION.

The editorial article on this subject which appears in this number, (page 389) was in type (except the closing postscript,) before the reception of the communication of Thomas Hicks, esq., which was published in the preceding number (page 378); and the first-named article was expected to have been presented, in the proper order of time, before the latter. Our absence caused the omission—and the consequent awkwardness of appearance of our notes to Mr. Hicks' letter, which were written to follow, though in fact they preceded the publication of the older article.

It has happened upon several occasions, in this work, that a communication exhibiting errors and mistakes of the writer, has served to bring forth correct and full information on the subject, from others better informed. We hope, and have now reason to expect, that such will be the fruit of our remarks on what may be termed (in more than one sense) the *mystery* of silk-culture in this country. We have been seeking, by other means, as well as by the publication of the article referred to, (and its still earlier communication in the proof sheet,) to obtain information on this interesting subject; and we are promised, and hope to receive, in part, before the appearance of this number, from two very intelligent and well-informed correspondents, interesting and valuable information on different branches of this subject.

In the time which has elapsed since the printing of the article referred to, we have heard of circumstances which, if of earlier occurrence, would have varied the details, and some of the inferences, though they serve to confirm the correctness of the general views there presented. The demand for plants of the Chinese mulberry has indeed so greatly increased at the north, that every plant and cutting now in Virginia, may be sold this year to northern purchasers at the highest prices. To our previous views and recommendations, therefore, we would add the advice to all who have plants to spare, not to sell any to speculators lower than at the highest prices; to raise as many plants as possible in 1839, from the stock retained, and to be prepared then to supply the whole country, at greatly reduced prices, and yet at greater profits than the highest prices at present would give. Every single bud planted next spring, and well taken care of, will produce from 10 to 70 buds—say not less than 30 on an average; and therefore at a half-cent, or even a quarter-cent the bud, the stock of 1839 will yield a much greater sum than the present growing stock at 2 cents the bud, or 25 or 30 cents the rooted plant. But whether the sales are made this year at the present high price, or next year at much lower, it is gratifying that the course of trade is so completely turned, and that northern purchasers are now coming to the south for supplies, and that this year more money will thus be paid to Virginia, than all that the northern nurserymen have before got from us for their immature and defective plants, with which this state was stocked.

It is not merely the rage of speculation, stimulated by legislative bounties, that has caused this great demand at the north. There is a real and great scarcity of *morus multicaulis*, caused by the immense loss of cuttings by the wet and cold weather of last winter and early spring, and the drought of summer.

The following communication to the Petersburg Intelligencer shows that our late correspondent, Mr. Hicks, of Brunswick, has already been well paid (and it was by northern purchases,) for his enterprise. Agents of sundry large dealers and speculators have already gone through lower Virginia, and have engaged (and, we fear, generally at half the price they were willing to pay,) all the plants of the *morus multicaulis* they could find for sale.

Lawrenceville, Aug. 28th, 1833.

"I think the public ought to know that Mr. Thomas Hicks, of this county, the year before last, and last year, laid out $245 in Chinese mulberry trees; and this fall will have for sale 30,000 trees. Two days ago he sold 20,000 to some gentlemen in Pennsylvania, at 25 cents a tree—the residue he reserves to sell in this vicinity; having realized the handsome sum of $7,500, from so inconsiderable an outlay, in so short a time. Mr. Hicks expects to have, by fall twelve months, 150,000 trees more for sale, and in all probability will get nearly or quite as much per tree. He has also commenced, the past season, making silk, and has succeeded beyond his expectations, demonstrating that our country is congenial to the production of that beautiful and valuable article. Mr. H. deserves the thanks, and has the congratulations, of the community, for his enterprise and success in introducing a new source of revenue and profit to the country."

Having written to Mr. Hicks to know whether this statement was entirely correct, he has stated in reply that the writer had made some mistakes, which he corrects, as follows:—"The outlay for my plants was $345 instead of $245; and the time allotted me to raise the trees is one year more than I have been employed. I never saw a Chinese mulberry tree until last year, (summer of 1837.) I think it probable I may be able to plant 200,000 cuttings next spring, instead of 150,000. The balance of the letter is all correct."—"If I had not sold the 20,000 trees, they would now bring me $1000 more than I am to receive."—This letter is dated September 8th, which was 12 days only after the sale had been made.

Since the 20th of August, the agents of at least five different and distant *multicaulis* dealers have visited this place, for the purpose of purchasing the plants which are in and near Petersburg. Most of these agents have come since the first of these lines were written. So rapid and violent has been the rise of the *multicaulis* speculation, that our monthly publication can give but a faint idea of its progress. For the last month, almost daily reports would have been necessary to show the state of the trade and the extent of the demand. Considering that the northern states are the original seat, and still the principal scene, of this speculation—the great void which still is to fill, throughout both the north and the south, for actual as well as speculative demand—the difficulty with which young *multicaulis* plants are raised in the north, and the far greater vigor in growing and after-value of those raised in Virginia—it will not be more strange than the

present state of things, if very high prices should continue to be maintained through another year. But all prudent holders and planters here ought so to act as to be prepared to meet a great reduction of price. The few persons who are so fortunate as to have many growing plants, of course, will do right to make the most of the present demand for their surplus stock. But with a view to all interests, it will be better to plant next spring than to sell *abroad* now; as 8 cents, or even 6 cents the tree, in 1839, will pay a far better profit, than to sell the stock grown in 1838 for four times those prices—which may now be readily obtained. Much money must be brought into Virginia from other states by the mania for this trade; and so far and to effect a general spreading of the *multicaulis*, which this mania certainly will, it will produce much benefit to public interests. But when the violent fever shall have subsided, it is to be feared that as great a reaction (or non-action) will follow the unnatural excitement; and that the proper business and regular and good profits of silk-culture will be scorned and neglected.

From the (British) Quarterly Journal of Agriculture.

THE CULTURE OF RHUBARB.

My notice of this exquisite vegetable shall be comprised in a few lines; but these, I trust, will avail to extend its culture more and more; for any thing more productive, salubrious, profitable, and expressly suitable to the purposes of the cottager, can scarcely be found in the entire list of vegetable productions. A few years only have elapsed since the rhubartic hybrid, *green* rhubarb, was cultivated for tarts; and held in very slight estimation: but since the introduction of the larger (giant) varieties, the demand has increased with surprising rapidity. Of the two sorts which I earnestly recommended, one is called, if I mistake not, *Radford's scarlet Goliah;* and the other is a small *red* variety which is crimson throughout when boiled or baked. These will supply the table from April to August, and suffice for every purpose.

CULTURE.—Let the ground be prepared precisely as for asparagus beds. Select clean offsets, with two or three bold eyes: the first week in March is a very suitable season. The eyes or buds of the Goliah will be of a deep, rich red, hence its name: the leaves, however, and stalks are green, though of different hues, and the latter are spotted and streaked with red. In the smaller pink variety the red tint prevails throughout.

The plants of the great Goliah should be set firmly in the soil, five feet apart, or five feet one way and four feet another: the smaller kind may be set three feet asunder, plant from plant, giving a free watering to each to settle the soil among the roots. Dry weather, an open condition of the ground, and a temperate unfrosty state of the air, should be preferred. When the growth becomes established, the ground must be kept free from weeds; and if dry weather supervene, water ought to be freely given round the roots, two or three times, with intervals of four or five days.

Not a leaf or stalk ought to be touched during the first year: and in autumn, when the leaves are all decayed, they should be laid in little trenches formed along the centre of the spaces, between the rows, sprinkled with a handful or two of salt, and covered with the earth that had been dug out. Thus the plant will itself furnish a portion of the manure that will be annually required. As winter approaches, a coating of well decomposed stable manure or leaves, or a mixture of both, two or three inches deep, should be laid round each plant, to the extent of two feet; and in the open weather of February and March, the whole bed must be forked over.

As a proof of the excessive productiveness of the *scarlet Goliah*, I need only mention, that, in the 2d week of March, 1831, twelve plants were set in ground prepared for asparagus. In June, the leaves met and the whole plot was covered. In 1832, the plants yielded profusely, many leaves measured above a yard and a half over the surface, the foot stalks being an inch and a half broad, and from two to three feet long. The outside leaves were, as required for use, stripped off by an oblique pull, not cut; the family was amply supplied till July and August, and yet the plants increased; the neighbors also were furnished with *leaves*, throughout the summer, and with *offset plants* in the succeeding spring. During the two past seasons the root stocks increased to such a size, that when it became needful to remove some, it required a barrow to contain the weighty mass that was raised, after great labor, from the soil. If any one try the experiment in a favorable soil, and with any thing like judicious management, he will scarcely fail to discover that the growth and production of the plant will exceed every demand that can be justly made upon it.

From the Farmers' Cabinet.

ROOT CULTURE.

No crop is so important to the farmer as roots, and yet they are seldom appreciated, either as a means of enriching the soil or of supporting stock. The produce of an acre of roots with the hay that may be cut off the ground previous to sowing the crops, will feed six or seven cows during the winter season, which, with a reasonable allowance of litter, will make thirty cart loads of manure. To try this experiment, we sowed an acre of ruta baga turnips, last season, in the following manner. The ground had been laid in clover the previous season, which we mowed the 20th of June, and yielded two tons of the first quality hay. We then ploughed it down immediately and spread upon it sixty bushels of lime. In a few days we harrowed it and spread over it 30 loads of compost, which had been collected through the winter, and turned twice; the consistency and cost of which were as follows:

2	loads of bone dust, say 50 bushels at 30 cts.	$15 00
2	do. ground oyster shells, 50 bushels at 10 cts.	5 00
2	do. leached ashes, 50 bush. 8 cts.	4 00
2	do. glue-makers' offal,	4 00
4	do. well rotted stable manure, at $1 50,	6 00
18	do. shovellings from under fences and old houses, 75 cts.	13 00
60	do. lime at 18 cts.	10 80
90	bushels. Total for manure	$58 30

To ploughing the ground, . .	1 50
do. harrowing several times,	1 50
do. sowing the seed, . .	75
do. half bushel seed, . .	1 50
do. 20 days' work clearing, thinning and hoing three times through the summer, 62½ cts. . . .	12 40
do. 6 days' gathering, drawing and covering, ...	4 50
do. interest on the value of an acre of land, . . .	3 00
Cost of the crop, ...	$83 55

There were over 850 bushels of turnips at 56 lbs. to the bushel, and 4 tons of tops.—Several cart loads of the turnips were sold in the market at 16 cts. per bushel, but the principal part of these was consumed upon the farm in feeding milch cows. The hay was sold for $20 per ton, which, after allowing $6 for expenses of moving, making and taking to market, leaves for 2 tons, $34 00

By 850 bushels of turnips, at 16 c.	136 00
do. 4 tons tops at $2 per ton,	8 00
Total value for the produce,	$178 00
From which deduct the expense,	83 55
Leaves the net proceeds,	$94 45

The ground last spring was in a fine condition, one half of which we put in with the mangel wurtzel beet, the other part with the parsnip. The crop was put in with very little manure—the beets look in a very flourishing condition, but the parsnips are poor, they did not come up in time to make a crop.

We have this season about 4 acres of the ruta baga, but planted in a different manner; the particulars of which I will reserve for future.

A COMMUNICATION.

Wilmington, Del., 8 *mo.* 20, 1836.

From the Genesee Farmer.

SQUASHES TURNING TO PUMPKINS.

Mr. Buckingham, the able editor of the Boston Courier, appears to appreciate the importance of the agricultural interest to the prosperity of the country, and devotes a column or two of his journal weekly to the dissemination of information on this topic. Besides evincing much skill in his selections, he gives some original papers of value. In a late number of his paper is a communication signed 'Ruricola,' who requests an explanation of the fact that squashes do sometimes change to pumpkins, or rather that squash seeds will when planted produce pumpkins. Ruricola selected his squash himself, took out the seeds, and planted them; they grew freely, and when he was expecting a feast of this excellent viand, he found they had been metamorphosed into pumpkins. Ruricola asks if this is any thing new under the sun? and requests Mr. Buckingham to explain "this singular freak of nature."

Mr. Buckingham in reply makes in part the following remarks:—"We would observe, however, that it is not an unvarying law of the vegetable kingdom, that like ever does, and ever will produce the like. It is a well known fact, that the seed of apples, pears, peaches, and other fruits, seldom, (perhaps not once in a hundred times,) produce fruit like that of the parent tree. But perhaps our correspondent will say that these are not parallel cases, and to make them so, we should cite one in which the seed of an apple should produce a pear, or that of the peach a plum. We will not attempt to remove this difficulty. It is beyond the reach of our knowledge. And we submit it to those whose better experience, and deeper research into the mysterious laws of vegetation qualify them to unravel and explain the same."

Without any pretension to 'better experience' or 'deeper research' than Ruricola or Mr. Buckingham, we think the matter can be explained very easily; and we give what we conceive such explanation, the more readily, as the transmutation of squashes into pumpkins, a well known fact, has by many been considered a proof that wheat could be changed to chess, an event which we think never has been, and probably never will be, proved.

To make the matter plain we may remark that botanists divide all plants into species, and these into varieties. Of the species we may give as examples the cucumber, (*cucumis,*) and the squash, (*cucurbitis.*) Of the first there are several varieties, as is known to every gardener, and that these varieties will intermix by the seed is also well understood. The squash is another species of plant, with numerous varieties also, among which we may enumerate the *lagenaria*, or gourd; the *ovifera*, or egg squash; the *verrucosa*, or club squash; the *citrullus*, or water-melon; and the *pepo*, or pumpkin. The musk-melon belongs to the *cucumis*, or family of cucumbers.

Now it is well known to the naturalist that while *varieties* will intermix by their seeds, a result caused by the impregnation being performed by pollen from another variety of the same species, *species* never do this; but that while all the varieties of the squash, if planted in the vicinity of each other, are liable to have their seeds affected in this way, so that no certainty can be placed on their producing plants precisely like the parent, there is no danger of change in the cucumber or musk-melon from being planted in the vicinity of any variety of the squash. In the varieties of the squash, therefore, great care is necessary to keep the kinds distinct, or prevent, in the way assigned, their intermixing with and degenerating each other. The probability is, that the squash from which Ruricola took his seed was impregnated by pollen from the flowers of pumpkins in the vicinity, and hence the fruit was of course a hybrid, or one in which the pumpkin nearly or entirely predominated. To preserve seed like the parent plant, in the squash or cucumber species, it is found best to save the fruit that grows nearest the root; as in this case the male and female flowers, or those that produce fruit and those that do not, are brought into immediate contact, and the impregnation more likely to be performed with pollen from the same plant, than with that from abroad. Thus we see that the changing of squashes to pumpkins, or vice versa, belongs to the natural order of events, and is nothing new under the sun.

The same rules that regulate the impregnation and production of the cucumis and cucurbitis, will apply to the plants *triticum* and *bromus*, or wheat

and chess. Experience shows that an endless variety of shades can be produced by sowing different varieties of wheat in the same field, or so that the pollen can intermix freely with the different flowers, the product however as we believe being some variety of wheat, and never chess or any of its varieties. We have never met with any evidence that the musk-melon has changed to the water-melon, or the cocoanut squash to the cucumber, though frequently planted in the vicinity of each other; the changes are confined to the varieties, and rarely or never reach the species. The remark, therefore, of Mr. Buckingham, that in the vegetable kingdom like does not always produce like, is correct if restricted to varieties, but incorrect if extended to species.

From the New England Farmer.

THE QUEEN BEE.

Having read some of the various theories on the honey bee and compared what I read with my own observation on the bees themselves, I have become satisfied, that notwithstanding so much has been written, very little is known of the government, police, or interior arrangements of the inmates of a bee-hive.

Writers informs us that a "*swarm of bees contains one queen, five hundred drones and nineteen thousand four hundred and ninety-nine neuters.*" Who knows any thing about this? Could we at pleasure examine the inside of an inhabited hive and closely watch the movements therein, we might form some opinions as to this army of neuters marshalled by a queen and drones, but human ingenuity can devise no way in which this can be done with any degree of exactness; we can only look around us and see how it is with other insects and animals that can be examined with impunity. Where throughout animated nature can we find a parallel? Does nature usually form neuters, or are bees an exception?

But neuters are not my object in this communication. I am even so much of an infidel as to doubt the existence of a queen bee. My doubts are caused in part by the following circumstances. I have carefully examined several swarms of bees after suffocating them with fire and brimstone, without being able to find *her majesty of "about eight lines and one-half in length, her wings so short as scarcely to reach past the third ring, and her color a deep yellow.* The present season, one of my hives swarmed and settled on the limb of a young apple tree near the ground. In a few minutes after, another hive swarmed and collected on the same limb nearer its end, leaving a space of about two inches between the swarms. The additional weight of the last swarm brought the limb so near, that the winds swung it against the ground so as to incommode the last comers. They began to gather up the limb nearer the first swarm and finally formed one cluster of bees, which I put into a flour barrel. They commenced working, and have now every appearance of prosperity. In this case where were the two queens who "*are infused with the most deadly hatred and the most insatiable thirst for each other's life, which nothing but actual death can appease?*" About sunset on the sixth of the present month I accidentally noticed a great stir amongst my bees, and on examination found a constant passing and repassing between an old hive and a late swarm from the same old hive, standing some eight or ten rods apart. The following morning at daylight the same intercourse was continued. The bees passed by thousands, and both hives appeared alive with bees. Although very anxious to find out what they were about, yet as there was every appearance of perfect harmony in their proceedings, be they what they might, I left them to settle their *own business in their own way*, and on my return after an absence of two days found that the old swarm had abandoned their hive to the bee moth and gone to reside with their children, having removed every particle of honey to their new habitation, leaving comb, bee bread, and moths in the old hive. Where were "the rival queens, who always lead the swarms, and cannot dwell in the same hive?"

In what age of the world the discovery was made that a hive of bees contained but one female and that one *the ruler of the swarm*, is unknown, probably when a great taste for the marvellous was in fashion, and Huber and subsequent writers could adopt a plausible theory with much greater safety than to thrust their heads into a bee-hive and watch the bees for some days.

J. B. T.

August 18, 1838.

THE PEACH TREE.

From a desire to encourage the culture of the peach tree, we offer the following as the result of experiment and observation.

It is generally known that worms, near the surface of the earth, destroyed them by eating the bark; the object is, therefore, to find a preventive, in order that the trees may become aged in a healthy state.

It is evident that these worms pass through the common change and assume the form of *millers*, early in the summer, and deposit their eggs on the bark as low as they can find access to it; and that the worms proceeding from them begin to operate in the latter part of the summer, when they have been found the size of a common pin. If suffered to remain they grow to the thickness of a rye straw; each of them girdles the tree about an inch, and the wood from the wounds to the heart dies. Hence it is, that a single wound impairs the vigor of the tree and a number of them will kill it. The point to be gained, is to protect the tree from the millers, and by a simple method, we have succeeded for several years, which is recommended with full confidence.

About the first of May remove the earth from the body of the tree, and shift it to the height of 15 or 16 inches, in such manner as to exclude the millers, burying the lower part of it in the earth. We have used straw cut to the length and about half an inch in thickness, bound on with twine. This should be removed about the first of September, as we have sometimes found the young worms in the upper part of the straw, being then readily discovered on the surface of the bark, covered by a little gum. The process should be commenced when the tree is young—they have been found

in a rapid growth the first fall after it sprouted. Thus a few minutes in a year devoted to a tree will protect it against this cause of decay—a very trifling expense compared with the value of this healthy and delicious fruit.

JONATHAN BRACE,
JOHN I. WELLS,
WM. H. IMLAY.

Hartford, Conn. Sep. 8, 1830.—*Conn. Paper of* 1830.

For the Farmers' Register.

TREATISE ON THE CULTURE OF SILK.*

BY GIDEON B. SMITH.

NO. I.

Prefatory Remarks.

The introduction of the culture of silk in the United States has been an object of great interest for some years past, and has been steadily on the increase, until it has now become almost, if not quite, a mania. In 1826, a silk-worm was a curiosity in most of the states of the union; and but little was known or said about it. At that time the writer of these remarks commenced calling public attention to the subject, and for seven years kept a laboratory expressly for the purpose of obtaining and diffusing information. He had access to all the books then extant on the subject, but they afforded little practical information. Every thing was new to him, and every thing consequently was to be learned from experiment. Happily, the simplicity of the whole routine was such, that careful observation and diligence enabled him to acquire the information he sought without material difficulty. From time to time he has published the result of his experience, on the subject generally, and on particular branches; but as the public feeling has now become more generally enlisted in its favor, the demand for information has increased. The writer is almost daily applied to for his opinions and the result of his experience. He has therefore determined to publish the following treatise.

The subject conveniently divides itself into three parts, viz.: The *culture of the mulberry*, *rearing the silk-worm*, and *reeling*, *twisting*, *and preparation of raw silk*. And these three divisions can conveniently be discussed in three numbers of the Farmers' Register. The following pages complete the first part, *the culture of the mulberry*, and it is hoped with sufficient clearness to enable any one to understand the subject distinctly. On the whole subject we shall endeavor to avoid disputations, entering into no critical discussions or controversies on disputed points; but giving our own opinions freely. If we describe one practice and say nothing of another, it is because we know the one to be the right one, and therefore say nothing of the other; for why should we take up our own and the reader's time in describing that which we know to be useless? With these introductory remarks we submit the first number to the public.

The Mulberry, Multicaulis Culture, &c.

The first thing to be done in the commencement of the culture of silk, is, of course, to provide a full supply of mulberry leaves. The leaves must be abundant, that no stinting of the worms may occur from any cause, at a moment when the whole crop depends upon a full and ample supply of food, which is during the last ten days of their feeding. The mulberry orchard must be convenient to the laboratory, that the expense of attendants for gathering leaves may be as small as possible. There are many accidents that may cause the loss of leaves; during rainy weather it is necessary to gather a supply for a few days ahead, that they may be dried before feeding them to the worms;* these may become spoiled, and thus lost. Therefore we should generally make provision for double the quantity of leaves that we expect to consume; for if we lose none, the cost of this extra provision will be trifling, compared to that of a whole crop of worms, from a deficiency. This is the only mode by which we can effect an *insurance* against such loss.

The kind of mulberry to be employed, is the next object of attention. When I published my 'Treatise on the Culture of Silk' in 1830, I had very little experience with the new Chinese variety, the morus multicaulis. It had at that time been but three or four years in the country, was not known at all except to very few individuals, and had of course not been propagated to any extent. It is true, I had the tree in my possession, and knew its value from a brief experiment in 1828 and 1829; but my supply of leaves from it

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* This new treatise, furnished from a source of such high authority, would, under any circumstances, constitute a very valuable portion of the original matter of the Farmers' Register; but more especially interesting, and useful for practical instruction, will it be at this particular juncture, when so many persons, who are totally unacquainted with the business, are about to commence the planting of the Chinese mulberry tree, and expect to commence the rearing of silk-worms. To supply the manifest want of such a manual of instruction as could be relied on for truth, and sound views, from a writer having much practical experience, as well as knowledge of all that has been published in this country on the subject, was the object which induced our request to Mr. Smith to write a treatise on silk-culture, as much in detail as his arduous engagements would permit him to prepare. This first number of the proposed series, is the commencement of his fulfilment of our request.—ED. FAR. REG.

* I have seen with much surprise a statement in the newspapers that a gentleman had made experiments in feeding silk-worms with wet leaves, and that the result was very favorable, the cocoons made by worms thus fed containing 800 yards of fibre, &c. If the statement be not a hoax, and one calculated and intended to do injury, by causing the destruction of whole crops of silk-worms, it must have been founded upon a very insufficient scale to test its merits. I have seen the evil not only of feeding with wet leaves, but even with leaves too succulent. I would therefore caution silk-growers against such statements; and advise, that, if they wish to try the experiment of feeding with wet leaves, to do so with a single hurdle, and not risk the loss of the whole crop; for be it known that the *tripes*, the disease usually produced by wet leaves, will generally spread over and destroy all the worms in the largest establishment, in a very few hours from its first appearance.

was necessarily very limited, and though I was satisfied of its superiority as food for silk worms, I was not prepared by sufficient practice and observation of its character, to say that it was capable of supplying the place of the white mulberry. I was not sure that it was sufficiently hardy; nor, even if every way preferable to the white, that a supply could be obtained sufficient for this extensive country. I therefore said nothing about it in that treatise, but gave the white mulberry the preference. After the publication of my treatise, however, in 1830, I satisfied myself of the superiority of the multicaulis over every other variety in every point. I found that it could be propagated more rapidly than any other tree, by cuttings and layers; that it furnished a supply of leaves in one-fourth the time required by the white mulberry, and therefore could be made to make returns for capital invested in it so much sooner; that a pound of its leaves contained as much nutritive matter as a pound and a quarter of the white mulberry; that the expense and trouble of gathering the leaves was not one-tenth as great as those attending the white; that the worms consume the whole leaf, thus leaving the hurdles less encumbered with the refuse; that the silk made from it was of a very superior quality, in strength and lustre; and finally that the worms in all cases gave it the preference over all other kinds. In my experiments I had the advantage of using fifteen different kinds of mulberry, and have often placed leaves from all of them together upon the hurdles; and the silk-worms invariably seized upon and consumed the morus multicaulis first. Up to the present time I have found no reason to change my opinion of the valuable qualities of this tree in any of the above particulars; on the contrary, every year has confirmed it.

One point of comparison between the morus multicaulis and other varieties I have reserved for separate discussion; not from any doubt remaining in my mind, but from its importance, viz., its *hardiness*, or capacity for resisting the effects of our severe winters. I have now had ten years' experience, and have had the tree exposed to all the severities of the last ten winters, (near Baltimore,) and have never yet lost a tree, nor the limb of a tree of the morus multicaulis, from winter killing. Fortunately, the situations where I first planted my trees were high and dry, and the soil composed of sandy loam. The trees throve remarkably well there, grew early in the season, ripened their wood early in autumn, and withstood the inclemencies of the winter, without a bud perishing. But some of my friends to whom I had given trees, and who planted them in rich low-ground, lost them entirely, or had the tops killed to the ground; and this fact led me to the conclusion, that high, dry, sandy, or loamy soils, were the proper situations for them; and all my future experience has confirmed me in it. All who formerly lost their trees in winter, and have removed them to high situations, have experienced the benefit of the change. The conclusion is, that the morus multicaulis is a *high-land tree*, and when cultivated on high grounds it is perfectly hardy, and capable of withstanding our winters, as much so as any of our native trees. During the winter of 1831-2, my old tree, (the first one that ever came to the United States, and which I yet possess,) was removed to the premises of a friend for safe keeping, (as I was removing to a farm in the country, and not knowing how long I might remain,) and was exposed to all the severities of that most inclement winter. I felt sure that it must have been killed, if not by the winter generally, certainly by that most terrible visitation of frost on the 17th and 18th of March, 1832. But to my surprise and great pleasure it did not lose a bud on that occasion. What is very singular, there was a white mulberry tree standing within 50 feet of it, six or seven years old, that was killed entirely by the winter. Both were equally exposed. I do not intend to infer from this, that the morus multicaulis was more hardy than the white; nor can I account for the death of the latter; the fact however was before my eyes. The trunk of the white mulberry, which was about three inches diameter, was split to the heart from the ground to the limbs. This old multicaulis tree was again removed to its present site in my garden, in the autumn of 1835, and of course now receives considerable protection from the house on the north, and high fences on the other sides. It makes generally young wood from 6 to 8 feet high every year, and the leaves on the young wood are generally 12 to 14 inches long, and 11 to 13 wide. Besides this old tree I have always had others in various situations. Those I had on the farm in 1831, '32, were planted on a hill, perfectly exposed to the north-west blast. The farm is at an elevation of 3 to 400 feet above tide. They withstood the effects of the winter perfectly. From all these considerations and facts, I think I am authorized in pronouncing the multicaulis perfectly hardy, when cultivated on high ground—its proper situation. But it is said that the multicaulis is not generally adopted in France and Italy in the silk establishments; and therefore there must be some fault in it. Some say it does not live long—soon decays—the silk made from it is weak and of a flimsy quality. All of which I know, from my own experience and the experience of all who have given it a trial, to be incorrect. That it is not generally adopted in France and Italy is easily accounted for. The demand for trees has always been so great that it was found more profitable to sell them than to keep them to feed silk-worms with; as they could get more money for one young tree than a dozen would produce in silk. They have also their ancient prejudices to contend with, and their ancient customs to combat in France and Italy. There the mulberry trees are owned by land-holders, and the leaves are sold to the raisers of silk-worms by weight. These land-holders have their old white mulberry trees on their estates, and they of course will be compelled to get rid of them before they adopt the multicaulis. These facts render it quite probable that the multicaulis is not generally adopted there; it would be a wonder if it were; for it is not often that we find any people, French, Italian, or American, willing to manufacture an article, worth when made only a penny, from materials that he can sell for a shilling. And it is the same in the United States. How many societies have been incorporated for the culture of silk, and how many individuals have commenced plantations of trees for the same purpose? And yet where is the silk they have produced? We, it is true, occasionally hear of this, and that person having produced his hundred bushels of cocoons;

and of this and that fine specimen of silk; but generally these silk societies and individuals have found they could raise and *sell* trees to more profit than they could realize from feeding silk-worms, and they have generally adopted that course. This will do no injury to the public, for soon the whole country will be supplied with the trees, and then both societies and individuals will fall back to their original object, the culture of silk.

Description of the Multicaulis.

The morus multicaulis is a dwarf tree, or more properly a large shrub, with *many stalks*, as its specific name implies, growing like the hazel, lilac, &c. It is continually sending up young shoots from the crown of the root, and when these become numerous, and the tree 6 or 8 years old, some of the oldest stalks die out; but whether from natural decay or being perished by their vigorous young brethren, I am unable to say. My old tree has been as high as 15 feet, 6 or 7 feet of which was young wood; but as I generally cut off most of the young wood for propagation, it has never exceeded that height. The leaves when full grown on the vigorous wood are 12 to 15 inches in length and 10 to 13 inches wide. The rapidity of their growth causes the ribs to grow faster than the *web* of the leaf, and hence the large leaves, are always *concave*, so that they cannot be spread out flat without tearing them from the edges to the mid-rib. The leaves are so heavy that they always hang, pendulous, and folded somewhat like a towel hung upon a nail. The surface of the leaf has a somewhat glossy appearance on the outer surface, but is a little rough to the touch. The fruit of the multicaulis is very black when ripe, and when crushed yields an intense purple juice, the stain of which is exceedingly difficult to wash out. The fruit is about the size and form of the white mulberry, but generally contains very little good seed—probably my old tree never produced more than 20 at one season.

It is a remarkable fact that all the species and varieties of mulberry tree are exempt from the depredations of all insects except the silk-worm. During ten years that I have been a close and daily observer of the morus multicaulis particularly, I never saw an insect of any kind upon it. The common caterpillar seems to be omnivorous—with the exception of the mulberry only—it never attacks that. The elm a few years ago was considered exempt; but it also is now annually stripped of its foliage by insects; and the *linden* also suffers more or less, but the mulberry remains untouched. Even the grasshoppers of the present year, 1838, more destructive than they were ever before known to be, pass by the mulberry, seemingly in acknowledgment of the great law of nature which devotes it as food for the silk-worm exclusively.* On the other hand there is *no other* vegetable that I ever was able to make the silk-worm eat as food. I have starved them, it is true, till they would eat lettuce; and ultimately till they would nibble at oak leaves; but they ate them and all other substitutes, as human beings, in a state of starvation, eat old shoe leather, not as their proper food, but in the hope of sustaining nature a few moments longer. The *Osage orange*, *Maclura*, is an exception. They eat that freely; but it is so like a mulberry in all its characters, that it required considerable ingenuity in the naturalists to call it by another name.

Having given my preference for the multicaulis, over all other kinds, and my reasons for it, it will not be expected of me to say any thing of other kinds; for, if the reader puts confidence in what is here written, he will adopt the multicaulis without inquiring about other kinds; and if he do not thus confide in my statements, any thing I could say about other kinds would be of no avail.

The mode of cultivating the multicaulis, is the next subject for consideration. The simplest and most common plan is as follows. Prepare the ground in the spring as for corn. Run furrows four or five feet apart, as preparatory to planting corn. Then take the limbs and young wood that grew last year, cut off close to the tree, and lay them lengthwise in the furrow; the but-end of one limb a short distance, a foot or so, from the top-end of the last laid down; cover the whole limb, with a hoe, about one or two inches deep; generally every bud on each limb will grow, and make a tree 3 to 5 feet high by autumn. The ground should be kept free from weeds and grass, by cultivation, as in corn. About the last of July, it is best to take a sharp spade and separate the young trees, by driving it down midway between them; but this is not essential; they can be separated when taken up the spring following. The next spring they should be taken up and planted in regular form in the orchard, where they are permanently to remain. The best method is to plant them 6 or 8 feet apart in the row, and the rows 10 to 15 feet apart—the rows running north and south, or north-west and south-east. By this mode of cultivation it will be perceived that eight or ten times as many multicaulis trees may be raised on an acre of ground as of *corn-hills*, and that, as the crop is ready for the market, (when they are raised to sell) as early as a crop of corn, there is no reason for the extravagant prices demanded for them. They would be a very profitable crop at 5 cents a tree.

There are other modes of cultivation which it may be well to describe here. Where cuttings are scarce, and the loss of any of them is of much consideration, a hot-bed should be made in the usual way, and the cuttings started in it as follows: Cut all the limbs and young wood into short pieces, with *one bud* on each; lay them flat on the surface of the hot-bed, in lines lengthwise, the ends of the cuttings a quarter of an inch apart, and the lines of cuttings two inches apart, with the bud uppermost. Then sift rich garden mould over them, half an inch deep, and put the glass frames on the beds. Every night and morning water them with a watering-pot, merely enough to keep the earth moist. They should be planted in the hot-bed one month before the usual disappearance of frost. In and around Baltimore, about the 1st of April is the time, as frost usually

* The fact stated in the text is without doubt very *generally* true, but not *universally*. Within a few days, we have seen several young multicaulis trees, partly stripped of their leaves by broods of caterpillars, which had spread their webs over the part of the plant of which the leaves were already devoured, and whose depredations were in full progress, when they were discovered and killed.—Ed. Far. Reg.

disappears altogether, about the 1st to the 10th of May. By the time the frost disappears the young plants will be about the size of cabbage plants, and may be taken out of the bed and planted in the orchard where they are permanently to grow. During the time they are in hot-beds, care should be taken in warm days to give them air, by raising the glass frames; and if severe frosts occur, to cover the glasses with straw, or matting; and when set out in the field they should be well watered for a few days, in the evening. The practice of propagating as above from single buds was first adopted by me, and followed for many years to very great advantage; and I am not sure but that it is still the best, as it often occurs that a cold backward spring rots a great portion of the cuttings planted in cold ground as first recommended above. Besides, in the hot-bed single-bud system, the trees get a month the start and make larger and finer trees. But in very extensive plantations it is "*too troublesome.*" A convenient hot-bed may be formed by those who are not provided with frames, &c., and are not acquainted with forcing gardens, as follows: Dig a pit two feet deep, four feet wide, and ten to twenty feet long, or as long as you please, if you have manure enough. Fill it with fresh horse dung six inches to a foot above the top. When you perceive it getting hot and settling down, cover it with six inches of rich garden mould, and rake it level and smooth. Let it remain for two or three days, till the heat begins to decline, and then put in the cuttings as above. At night, when cold, lay some light brush over the bed, and spread straw or mats over them, and water them as in the regular hot-bed. This method will generally be found to answer all the purposes of a perfect hot-bed.

Another method is by layers. Instead of cutting off the limbs and tops, bend the whole tree down to the ground, and cover it, limbs and all, two or three inches deep, with good mould—it would be well to turn up the ends of the limbs, so that the points are just above ground. All the buds on the whole tree that are under ground, will generally grow and each one make a tree by the autumn, when they are to be taken up and separated. The objection to this plan is, that the young trees are apt to be too crowded, and consequently do not grow as large as when the limbs and young wood are cut off, as in the first mode; and I do not find that it is any more certain, or possesses any one advantage over that mode. All other modes of propagation, grafting &c., are perfectly useless, and therefore nothing need be said about them.

It seems, however, proper to remark, in explanation of the omission to give the mode of raising the multicaulis from seed, that this tree produces seed very scantily. Probably an acre of trees of full growth would not produce an ounce of good seed. It is generally the case with all plants that are readily propagated by other means, that they do not produce much, if any seed. But though the multicaulis were to produce seed as abundantly as the white or any other variety, its propagation by cuttings would still be the most eligible mode. The mulberry seed lies a long time in the ground before it vegetates, generally 5 to 8 weeks, and in the mean time the weeds get the start, and smother the young plants as fast as they appear, unless the most untiring vigilance and care be observed in keeping the beds clean. Even then, in spite of care and industry, many—a great proportion—of the little plants will be destroyed in the process of weeding. Even after you have raised the plants above the influence of weeds, they are tardy of growth, and do not produce leaves of full size till they have been repropagated by cuttings, layers, &c., for three or four years. All idea of raising them from seed will be abandoned by every one as soon as they become acquainted with the facility with which they are propagated by cuttings, the scantiness of seed produced by them, and the difficulty of raising them from seed.

I cannot omit the present opportunity of again cautioning the people of this country against the impositions that have been for several years practised, and are yet continued, of *selling morus multicaulis seed.* No such seed ever has or probably ever will be for sale here or elsewhere; and those who pretend to sell it are imposing upon the public a worthless article. The tree does not bear seed enough to pay for the trouble of saving it, even if it sold for its weight in gold. That the seed will produce the genuine multicaulis, I have no doubt, but it will require some years of successive propagation by cuttings to develop its peculiar characters, large leaves, &c. But this question is a matter of little moment, as no person will resort to seed when they can obtain cuttings.

The soil, situation, &c., best adapted to the morus multicaulis, have already been mentioned in a previous part of this paper. The soil should be such as will yield a fair crop of corn; if made richer, the trees will grow larger, but the advantage will not compensate the extra expense. It should be sandy loam, if possible; but gravelly or stony soil answers well: heavy clay soils do not do so well. The situation *must be high land*—that is, it must not be low bottom land. Hill-sides are best; the tops of hills next; level lands are good, provided they are eight or ten feet above the streams of water, and not subject to water standing on them after heavy rains; but if they are surrounded by hills they will not do, being more subject to early and late frosts than if not thus surrounded by hills. It must be borne in mind, that we are discussing the subject of soils and situations best adapted for the permanent occupation of the multicaulis. Where the trees are raised to sell, or to be removed in autumn, then rich alluvial or loamy bottom land is best. The trees will grow larger there; and as there is to be no risk of winter-killing, there is no other objection. In cold seasons, however, and especially in cold late springs, bottom lands are too cold for them, and consequently the trees will be small. In all cases when they are grown on bottom lands, they should be taken up in the month of November, and *buried* root and branch on some high dry situation, covering them about one foot deep. This will preserve them effectually till spring, when they should be planted out, as above directed, in a proper soil and situation. Cuttings are preserved in the same way: cut them off close to the tree in November, dig a pit two feet deep in a high situation, put them into it, mingling earth among them, and finally cover them up a foot deep at least; filling the pit entirely, and arching it as in burying potatoes, &c. Those who fear the loss of the cuttings if left remaining on the trees, can certainly save them in this way; but if trees are in proper situa-

tions there is no danger of the cuttings being killed; unless indeed from late planting in the spring, or some other cause, the wood of the cuttings has not been properly ripened. In that case, all the unripe wood will of course be killed by winter if left on the tree, and it will be proper to take the cuttings off and bury them as above.

Much has been said about making *hedges* of the morus multicaulis. As a barrier against cattle or other stock it will not do. Cattle are very fond of it, and will eat the leaves and even branches as large as the finger of the young wood. It may be used as an ornamental hedge, however, and planted in hedge form in fields, to great advantage. The distance between the rows or hedges in the latter case may be from 12 to 20 feet; the latter will admit the passage of a cart for conveying leaves to the laboratory.

In conclusion, I believe I have said every thing that need be said on the subject of the mulberry, its culture, &c. In the next number we shall discuss the rearing of silk-worms, the laboratory, &c.

STRICTURES AND REMARKS UPON FORMER ARTICLES.

To the Editor of the Farmers' Register.

Sept. 6th, 1838.

As marvellous assertions, and alleged discoveries, if published in our agricultural papers, without comment, may often lead the sanguine and inexperienced of our brethren into serious errors, it seems to me that they should always be noticed. This remark has been suggested by two articles in your highly useful journal; one in the August No. (p. 269), and dated Houston county, Georgia, which you have copied from the 'Southern Agriculturist.' The other in the Sept. No. copied from the 'Watertown Standard,' a New York paper, which appears to be editorial. The Georgia planter, speaking of the treatment of their negroes, says, (I give his own words,) "*they have their weekly allowance each, of three hundred pounds of bacon, or its equivalent, and as much hominy or corn-flour as they can consume, ground at the mills, delivered to them. When potatoes and peas are in season, they are permitted to use all they may want.*" Now this must either have been a great, but unnoticed slip of his pen, or he must be a near relation of the celebrated Baron Munchausen. Counting seven days to the week, this allowance is just forty-two pounds and six-sevenths per day, which, to say nothing of their hominy, corn-flour, peas and potatoes, ought to have enabled his negroes, instead of merely doubling Mr. Frost's cotton crop of four thousand pounds to the hand, as he states they did, to have made at least three hundred times as much.

The second article which I beg leave to notice, is published to prove the wonderful efficiency of soaking seed-corn in a solution of saltpetre. This, the editors pronounce to be "*one of the greatest discoveries of modern times in the neglected science of agriculture.*" On examination, however, of this highly interesting assertion, we find nothing whatever in their statement to support it, but merely *their* own belief produced by one single inspection of an experiment made by a Mr. Massey, who planted five rows of corn, the seed of which had been previously soaked in a solution of saltpetre, (it is not said whether or not it was a saturated solution,) while the adjacent rows had not been soaked. These disseminators of useful facts in husbandry proceed to affirm, without any apparent doubt in regard to the accuracy of their own judgment, that "*the five rows planted with corn prepared with saltpetre, will yield more than twenty-five rows planted without the preparation.*" That these gentlemen believed what they said to be true, I will not permit myself to doubt; but before any general credence can be given to such an assertion, a well authenticated statement of actual measurement must be exhibited. It certainly may be imagined as a possible thing in this age of almost incredible inventions; but a five-fold increase of crop, from so simple and cheap a process, approaches too near the miraculous, to be generally taken for any thing more than the extravagant opinion of persons of very little experience in such matters, and one, therefore, but illy calculated to induce practical corn-planters to repeat the experiment.

A word or two now, as to what these gentlemen call "*one of the greatest discoveries of modern times.*" Almost from my earliest recollection, and that reaches back more than half a century, I have known the soaking of seed-corn in a solution of saltpetre to be practised. Indeed, it was once common in some parts of Virginia; but that was at a time when I paid little attention to such matters, and therefore I do not recollect how far it succeeded. The fact however is, that the practice has long been discontinued among us, and consequently it is a fair inference that the increase, if any, of the corn crop by this process, could not have been generally thought to be even double, or we should still find the saltpetre solution in general use. So much for this asserted discovery. But since the constitutions of mankind often undergo such changes, that food, which does little or no good at one time, may fatten at another, the same may happen to the constitution of plants. Many still more extraordinary analogies have been actually traced out, or imagined to exist between the animal and vegetable kingdoms. By all means, therefore, let us all feed our seed-corn next spring, with saltpetre and water, for it is not quite impossible that we may equal or beat Mr. Massey's five rows so marvellously fattened upon that food. I, for one, am determined to try the experiment should my life be spared; and you shall have, not my opinion merely, but an accurate statement of the quantity, by measure, of the corn fattened upon saltpetre and water, and that which I shall leave to seek its food from the ordinary sources of supply. In this determination I assure you that I am perfectly serious, for I have been a corn-soaker for many years, in full faith of its efficacy to an extent which renders the practice well worth continuing. My solution, however, now very common in Virginia, has heretofore been nothing more than tar and water, in the proportion of about one pint of tar to ten or fifteen gallons of water, after which the seed-corn has as much plaster of Paris or lime mixed with it as will adhere to each grain. This protects it, in a considerable degree, from moles and birds, and probably benefits the subsequent growth and product, although I know of no experiments yet

made to ascertain whether this supposition be correct or not. I remain, dear sir,

Your old friend and fellow laborer,
J. M. G.

[The article respecting the wonderful (and, as we fully concur in pronouncing, the incredible) increase in corn, from merely soaking the seed in a solution of nitre, is justly obnoxious to our correspondent's strictures. It was inserted during our absence, or it would have been accompanied by remarks, showing that the article was selected as a scrap of agricultural news, and as furnishing subject for experiment, but not as ground for belief, or confidence, upon merely the present statement. We can scarcely suppose that the editor of the paper from which the article was copied, and his friend the farmer, both being named and known witnesses, could have deliberately combined to tell so monstrous a lie, as a severe judgment *may* pronounce upon the statement made, viz., that simply soaking the seed-corn in saltpetre-water, increased the crop fully 400 per cent. We infer, that there *was* an increase, (greatly exaggerated perhaps by the guessers,) but that it was owing to some indirect benefit, and in a manner not stated, and not amounting to any noticeable addition to the fertility or producing power of the soil.

So far we agree with our friend J. M. G.; but not so in his harsh strictures upon the words of another selected article. It is very true, that the phrase quoted is not grammatically or critically correct; and, if subjected to be construed literally, and according to the strict rules of composition, that it would (if the contrary were not evident,) bear the meaning that our correspondent charges to have been conveyed. But the manifest absurdity of a man's weekly allowance being 300 pounds of meat, ought alone to be enough to acquit the writer of any intention of making such a statement. To our reading and understanding, it was so plain that the writer meant a *weekly proportion* of 300 pounds of bacon allowed for the year, that it was not thought necessary to add any editorial note in explanation. If such an inaccurate mode of expression had been seen in a manuscript communication, it would certainly have been our duty, as it is our usage, to correct it; but it is not our practice, nor would it be justifiable, to alter the text of articles selected from other publications.—Ed. Far. Reg.]

PROFIT FROM CLOVER. THE DROUGHT. SEA-ORE AND SALT. COULTERING NEW GROUND. IMPROVEMENT OF LAND AND HEALTH, &c.

To the Editor of the Farmers' Register.

Old Point Comfort, Elizabeth-city County, September 10, 1838.

The wheat crops in this neighborhood have not realized the sanguine expectations entertained before harvest. The growth of straw, was most luxuriant; but the heads small, and generally light. The fallowed wheat was infinitely superior to that sown on corn-land. I sowed 45 bushels in a field of 42 acres, 12 of which had been in clover turned in in September. The exact yield I have not ascertained, as I have got out yet but three stacks, averaging 80 bushels each; but I obtained ten stacks, and of these, four and a half were cut from the twelve acres. It is proper to state that the fallowed land was naturally the best part of the field, and would, under any circumstances, have produced the best crop; but nothing like their difference would have resulted, without the aid of the clover. A gentleman in this neighborhood, of great accuracy in such matters, told me, that last year his fallowed land yielded 26 bushels, and his corn land 13 to the acre, just one-half; and that this year the difference was full as great, if not greater; the land in both instances of equal quality. Can there be a stronger argument than this, to exhibit the benefit to be derived from clover, to say nothing of the excellent pasturage it affords for two or three months, if, like myself, you are compelled, occasionally, to turn your stock upon it, until the harvest fields are ready for them.

But, says one, my land will not produce clover, and what am I to do then? Why marl it. I don't believe there is an acre of land below tide-water, that will produce any thing, that cannot be made to produce clover. Lime it, and if you have not the means to buy the lime or marl, sell one-half of your land, and apply the proceeds to the other, and with a light top-dressing of vegetable manure, my life upon it, you will make the clover grow. I have tried it, and know it to be true. Four years ago I sowed a field in wheat, and the following spring put it in clover, at the rate of a gallon to the acre. The wheat was indifferent; the clover seed thrown away: for, except here and there in small spots, not a leaf was to be seen. The following winter I dressed this field from a deposit of burned shells, which had been on the farm from time immemorial, at the rate of about 100 bushels to the acre, and gave it a light coat of vegetable manure. In the spring it was planted in corn and yielded several bushels to the acre. In the fall it was again put in wheat, and clover sown on it in the spring: and this year I had as luxuriant and well-set a crop of clover, as I ever saw in Virginia.

We have suffered this year from the drought and heat, equally with most other parts of the country. We had no rain from the 21st July, to the 14th of August. It may not be uninteresting here, to give a comparative statement of the mean temperature, and the amount of rain that fell in the last three months and the corresponding month of last year.

1838.	Mean temperature.	Inches of rain.	1837.	Mean temperature.	Inches of rain.
June.	76	$4\frac{5}{10}$	June.	75	$3\frac{5}{10}$
July.	83	$2\frac{4}{10}$	July.	79	2
Aug.	82	$1\frac{1}{10}$	Aug	79	$9\frac{5}{10}$

The thermometer is noted at sunrise, 2 P. M. and dark.

We cannot but be struck with the difference in the quantity of rain that fell in August last year and this; and although the farmer has suffered

ruinously in the curtailment of his corn crop, he has abundant reason for rejoicing on another score; for the same cause that shortened his crop, has preserved his family in the enjoyment of earth's greatest blessing, health. I have never known the country so healthy at this season; and I doubt very much, on balancing accounts at the end of the year, if the farmer doesn't find himself as well off with a short corn crop, as he has heretofore been with a good one: for when there is no sickness and death, there is no toll to pay the doctors, and no reduction in the capital of his estate.

I obtained a very satisfactory result from the application of sea-ore, on a part of my corn-field this year. Whilst the neighboring corn was fired above the shoot, that to which the sea-ore had been applied, suffered comparatively little or nothing. Independent of its general fertilizing properties, then, (and I have fully demonstrated them,) this additional one of attracting moisture from the atmosphere, renders it a most invaluable manure, especially upon high sandy lands.

In a former communication, I mentioned the beneficial effects I had experienced from sea-ore on wheat and oats. I was in some doubt, whether they did not depend mainly on the salt contained in it; and this year I have fully satisfied myself on the subject.

In the month of March last, I top-dressed a bed of fall wheat, one of spring wheat, and one of oats, with salt scattered by the handful, as you would sow oats. I watched the effect closely until harvest, and could at no time perceive the least benefit from the application.

I was occupied a good deal last winter in getting up new ground, and my experience may be of some use to others. I was desirous of testing the relative value of the grubbing hoe and coulter for the first breaking up of the land; and am convinced, that the labor can be performed infinitely better, and at less than one half the expense, with the coulter than with the hoe. This may be no news to many of my readers, as I know the coulter to the north and in some parts of our own state is extensively used for the purpose: but it will be to some of our low-country farmers, who have never used it, or seen it used. I first cut around the stump, and cut out the large surface roots, then run a strong coulter drawn by four or six oxen, (I used two oxen and two steady horses,) thoroughly over the ground, and afterwards cross it. A man should follow with an axe, to chop any root that may be too strong to be pulled up.

Mr. B ——, an intelligent gentleman of my acquaintance, residing in this county, is this year making an experiment on the comparative expense of keeping his hogs up, and letting them run at large, until taken up in the fall to fatten. He found that his penned-hogs required something more than food, to make them thrive. He gave them sulphur and salt, which he thinks much more highly of, and asked my opinion on the subject. I advised him to give them ashes without limit: he did so; and when I saw him a few days ago, spoke in the most rapturous terms of their effects, and insists that so valuable a remedy should be generally published. I replied, it was no discovery of mine: I had heard it, and used it with great success, and presumed it was generally known. He said, it was new to him; and as it may be to many others, I communicate it for general information.

The ashes plan, however, did not take with my friend, without some opposition from an unexpected quarter. The "old lady," whose province extended to the lie-stands, entered a formal protest against this encroachment upon her domestic economy, as she should have no ashes to make soap. But when it was proved by figures, (and figures cannot lie,) that though she might be the loser in ashes, she would be the gainer in grease, like a good wife, she gave in, and is now content to abide the experiment.

This gentleman, a practical mechanic, told me of a cheap and effectual method of rendering smoke-houses and dairies rat-proof. He has repeatedly tried it himself, and induced others to try it, and always with the fullest success. After digging out your foundation, lay the first course of bricks, to extend four and a half inches all around, beyond the wall. The operation is this: the rat always burrows close to the wall, and continues to descend until he meets the obstruction of the projecting course at the bottom; finding he can go no lower, he desists. Let not the simplicity of this plan deter any from adopting it. I will, however, add one suggestion: Do not, as I once knew a gentleman to do, who, at great labor and expense, erected what he supposed would be a rat-proof corn-crib. It was placed upon eight posts, nicely hewed and smoothly covered with sheet copper. The rat could not climb here, because there was no place to stick his claws in; and it was so high from the ground, that he couldn't by any possibility jump up, and get a foot-hold: but it was also too high for the gentleman to get into, without a pair of steps; so they were put, and the enemy had no longer any necessity for blunting his claws against the copper.

Mr. B —— is an instance of what enterprise and industry will effect. He purchased his farm fifteen years ago: it was a dense forest; not an acre of cleared land attached to it; it was low, and, consequently, sickly; but he determined to make it a productive and a healthy farm, and he has succeeded. He has cut down the forest of centuries, exposed a fine, rich virgin soil, and ditched in every direction. Mr. B ——, jr., who has now taken upon himself the direction of the farm, has this year cut a canal eight feet wide and four deep, upwards of a mile, and will continue it as far again. This canal will bring into cultivation as fine a body of land, when cleared, as there is in the lower country, which has heretofore been worse than useless, as it served but as a hot-bed of malaria. A portion of it is already in corn, high and dry, and suffering from the drought. The homestead embraces every building necessary for the convenience or comfort of the farm: a large mill, worked by oxen; extensive sheds, capable of covering every article of stock on the farm, from which he raises abundant supplies of best manure; stacks with shingled roofs, for the protection of his artificial grass hay; and the best corn-house I ever saw. A few such examples, and the tide of emigration from east to west would cease to flow: for land like this was can be purchased for $4 an acre.

I sowed, in February, two bushels spring-wheat, procured from Thorburn, in New York, on corn-land of fair quality. The produce was twenty-one bushels, the grain very good, better, I think, than that sown. The general opinion here is

much against it. I am satisfied it never can be adopted in this climate as a substitute for winter wheat: but I think it may be sown to advantage instead of oats, on land that will produce wheat. I also procured from Thorburn, in December last, a quart of a new white wheat, recently sent out from England as a sample, with a few of the stalks, called "Ealey's gigantic." It well deserves the name, for it was the largest stalk, largest, fairest and heaviest grain, I ever saw. I drilled it in my garden and cut it on the 6th July: it yielded three bushels and a peck. The stalk was as large as the original, the heads very long and apparently well filled, but the grains were shrivelled and evidently injured whilst in blossom, by a heavy rain and wind, from which the other wheat, being more advanced, almost totally escaped.

R. ARCHER.

THE CULTIVATION OF MIDDLE SOUTH CAROLINA. ADDRESS OF JOSEPH E. JENKINS, ESQ., TO THE AGRICULTURAL SOCIETY OF ST. JOHNS, COLLETON, S. C. THE LOUISVILLE, CINCINNATI AND CHARLESTON RAIL ROAD.

To the Editor of the Farmers' Register.

Sir: "*In passing through the upper country,* "the planters are *astonished,* on inquiry, at learning how little use is made by us of the plough; "an instrument of *indispensable necessity* to "them !!!! but, it is easy to be accounted for; two "systems of agriculture can never be more dissimilar, than the one used by them, and that "which obtains in this section of country. *There* "(I speak of the section through which I passed "this spring, *videlicet,* from John's Island to Columbia,) 'twould be *preposterous* to speak of manuring; from 12 to 15 acres and upwards of land "are *commonly !!!!!* planted of cotton alone; *here,* "$3\frac{1}{2}$, and, in some *rare* instances, four of cotton, "and one of corn. We have not the facilities of "shifting our fields from a worn-out spot, to a "virgin soil, *exhausting* that, and then again "*pursuing the same process.* * * * * * "Our system approaches nearer horticulture "than farming; comparatively, "*our fields are* "*perfect gardens.*" * * * * * * I did not "see a field of cotton on my return from Columbia, on the 5th of June, which had the appearance of having had a single working, from the "time the seed had been deposited for planting, "(the planting averaged the 15th April, in 1838,) "to that day. In most of them, *the weeds and* "*grass were taller than the cotton.* * * * * * "Do not misunderstand me, gentlemen, as condemning their system; to them, it may be most "profitable; to us, one thing is certain, it would "be ruinous. Therefore, the hoe is the implement of husbandry with us; and a powerful instrument it is, in the hands of a strong and vigorous people"—a people, to subsist whom and all other bipeds and quadrupeds on a plantation, one acre of corn is planted [to the hand.] !!!!! This, at least, is the average of the low country. On Mr. J.'s plantation, it is probable his servants have of fish *quantum sufficit.*

Merely observing, that the italics and marks of admiration are mine, and not the addresser's, I cannot avoid expressing my "astonishment" at a representation of middle and upper country cultivation, so grossly erroneous, and only to be excused, because it originates in innocent ignorance. For I assert, without fear of contradiction, that 12 to 15 acres are, in general, the *maximum* of good planters, for corn and cotton: that there is not a respectable planter in middle or upper Carolina, who not only does not think manuring "preposterous," but whose conduct is diametrically opposed to it, and who does not "shift his fields," not as above described, (a circumstance now wholly out of the question,) but, from one *improved* spot to another; that there are annually to be found fields of cotton on the Wateree, the Congaree, &c., which will vie with any on John's Island for horticultural neatness; that as to "the weeds, grass," &c., I know not what road this eloquent addresser travelled; but, this I know, that, in 1838, barring a short space of time, when the grass got a little ahead, most of the cotton in the middle country was very clean; and, that in the same section, there are as fastidious amateurs, fully as well acquainted with the operations of the hoe as the most astute planter in the low country.

But, what is the fiscal fact—in short, the real value of land in the middle and low country—(always excepting the sea-island cotton and the tide-rice plantations, the latter diminishing 33 per cent. in the produce for 1837-38, and Manilla and East India rice finding a profitable market in Charleston—) literally nothing—wholly abandoned. It has been sacrificed to the "precision and peculiar elegance of the hoe," to the introduction of horticulture, *vicè* agriculture, to the abandonment of the plough, to the starvation system, which arose from the substitution of cotton for rice, and the relinquishment of the inland swamps, where cattle to any extent might now be raised. Indeed, if lawyers could be driven from the public counsels, and engineering, instead of oratory, be taught at the colleges, South Carolina has the means of producing millions she does not now do. But, to return to the price of land. Tracts in the low country, sold after the revolution for guineas, are not now worth as many dollars. On the other hand, in the middle and upper country, the price is constantly increasing.—2,000 acres have recently been sold, on two years' credit, for $20,000, which, in the low country, would not produce a tithe of the sum—8,000 acres, sold by an emigrant for $2 50, are now worth $5, if not $10 per acre. The simple reason, the superior cultivation, greater produce of provisions, infinitely better treatment of negroes, and the employment of respectable overseers; for, planting, as they do, five acres of corn to the hand, —— acres of oats, wheat, potatoes and peas, (with the corn,) so to act is no matter of difficulty, any more than there is to be discovered an impediment to an allowance of half a pound of good bacon *per diem* to a laborer, or the payment of an adequate salary to a humane manager. [*Vide* an article at p. 269, Farmers' Register.]

In consequence of this system, the planter makes his three, four, or five bales to the hand; and, remembering the facilities of shifting fields, &c., I would observe, that I have known a bale to the acre, produced by a planter, who manures with cotton-seed, clay, leaves, &c., from land that

has been cleared thirty years; and, it is not more than four years since, that on discussing the subject with four planters, in the same neighborhood, it was determined that, for every bale produced a few years before, four were now sent to market—the plough, the agent. Fields thus productive, do not permit the growth of grass, &c., though after the fodder is gathered, good crops of crow-foot grass are reaped from the corn-field.

The editor of the 'Southern Agriculturist,' (p. 414, Aug. number,) alluding to an idea of your's, laments the want of county agricultural surveys. Their want is evident in Mr. Jenkins's errors; and, while such universal ignorance, so great a disposition to cherish that ignorance, and entertain such monstrous misconceptions of the more correct management and the greater wealth and equal civilisation of the upper and middle districts, prevail in the low-country, the prospects of the south, and South Carolina especially, are dark, dark indeed. In the expenditure of the public money, it has given rise to an absolute proscription of all east South Carolina, and a denial of instrumental surveys to sections loudly and fairly calling for them. The rail-road has been made to run in such a direction as to exclude any access to the provisions of the west from east South Carolina. It has been carried, at an enormous and increased expense, to Branchville, *via* Orangeburg, in fact, to a rail-road, that cannot carry cotton down at any reasonable charge, and receives and spends $1,000 per diem, or only $320,000 per annum. This is the rail-road that is to compete with the almost completed scheme of Georgia and Tennessee—a scheme, in which, *nolens volens*, the "ancient dominion" must join. There will soon be free access, from the Atlantic at Savannah to Knoxville, which may be said to be equi-distant from the James at Richmond and Petersburg, and Charleston and Savannah. On its north-east *terminus* and in the more populous and productive character of its whole line, (lessening it to one-third if not one-quarter the distance,*) the full and forcible effect of western commerce will be felt; for, nothing can prevent a road from Knoxville to Abingdon, and thence to Lynchburg. Again, North Carolina will aid by a road along the Piedmont route to Danville, thus opening another highway to Petersburg and Richmond. To these outlets for western commerce, we may add the Baltimore and Ohio rail-road, the Mercer, (Chesapeake and Ohio) canal—ensuring to the Chesapeake bay, &c., the GREAT DEPOT; also, the Pennsylvania and Erie canals—canals coming, as well as the Mercer, into competition with an overwhelming power, if, as is said to be the case in Great Britain, boats can be towed at the rate of six or nine miles an hour by steam.

But, what is "the dominion" about? In the Knoxville Register, in a paragraph, most probably written in Charleston, we find "the main ob-"ject of the Augusta convention is to establish a "*direct* trade *from the south* directly to Europe. * "* * * East Tennessee is particularly and "vitally interested. It is important to her, *be-"cause* it throws *our* exports and imports into the "same channel." Now, gentlemen of Knoxville, permit me to ask you, for what "exports and imports" you can find a market in Charleston, (the very existence of which, as a harbor, according to the engineer Holmes*, is threatened,) equal to that on the borders of the James? None, whatever; and you would have done better by an access to Sumpter, &c., districts in South Carolina, than you possibly can in Charleston, the market of which, in bacon and corn, is to be glutted by a single train of cars; and, indeed, you had better now pray the board to take this route into its serious consideration. But, I forget myself; that is not the object of your paragraph, or of the meeting—the intention being to puff the bank and prepare the speculators to plunder the public, and fill their own pockets. It is to this effect, that they tell you their mighty agent is to sell the South Carolina bonds, bearing five per cent. interest, at par, in Amsterdam, when five per cent. New York stock is worth but ninety in London; or rather, that he can get *a premium* for them, and get money for three per cent. They have also *said* Mr. Biddle has pronounced the charter worth millions. But, there are other *becauses*—"be-"*cause*, after the establishment of the south-"western bank, (five-sixths of which are held in "Charleston and Columbia,) the rate of exchange "will be reduced *to almost nothing;* and, *because* "by a direct shipment of the great southern sta-"ples, and a direct re-shipment of European fab-"rics, the factorage and commissions now paid at "the north, *will be entirely taken off !!!!!* and "our foreign fabrics made, *by so much*, intrinsi-"cally cheaper."

It is for the sage of Knoxville to demonstrate, how exchange is to be reduced by an issue of paper, and this only payable in Charleston, the capital of a state, not having more than 300,000 whites. I have been even stupid enough to believe it was regulated by the material passing to and fro, sold and consumed. What the latter is of 35,000 persons, two-thirds negroes, in Charleston, had better be first ascertained, as well as whether, should cotton fall in price, South Carolina will not necessarily be compelled to supply herself. But the *direct* shipment is the reliance; as if it did not and had not existed for years. Only the home consumption may be said to be consigned (in 1837-8, 54,280 out of 279,957 to the 25th August, from Charleston,) to the north.† This year, Georgia and South Carolina have shipped nearly 600,000 bales, little of it going to the north. How the factorage and commissions are to be saved, is beyond my humble comprehension. Is Charleston to do the business for nothing?

I will conclude this paper by a reference to the

* See a paper as to the New York canal, and what it brings *from* the west, in a late Farmers' Register.

* "Should the uninterrupted passages of water, by the course thus formed, continue, it is greatly to be feared that a few years, if not months, will effect a total change of the currents passing by our wharves; that Hog Island will become the north channel, and the channel in front of our wharves be obstructed by large sand deposits; that the entire western portion of Sullivan's Island, including Fort Moultrie, will be swept away, thus widening the entrance to our harbor, which must substitute *sand flats* for *the channels on the bar*, and leave the city and harbor "exposed to the unchecked violence of destructive storms." Three forts at the site of Fort Johnson, and three at Fort Moultrie, have already been destroyed.

† A tabular statement of direct and indirect shipments for a few years back, would be instructive.

8th section of the bank act, "declaring directors and capital distinct and separate;" and, that the bank "shall never be liable for the debts of the "rail-road company; but the rail-road company "*shall be liable for the bank* in case of failure;" and, then add, in nearly General Hayne's own words, how, after all the dramatic management in Nashville and Columbia, the affair of the bank was concocted. Eight millions were to be subscribed by the 31st December, 1837, to secure the charter. After Tennessee had assented and paid to the amount of $650,000 for roads in her own state, the subscription amounted to but $5,300,000. The only means of effecting this important object, was the purchase of the Charleston and Hamburg road, the stockholders of which becoming subscribers in the Louisville, Cincinnati and Charleston road, added a subscription of 20,000 shares, leaving a deficiency of only 7,000 shares, or $700,000, to make up the $8,000,000. But $8,000,000 were necessary for the first instalment due to the Charleston company. Of this sum, there was borrowed $700,000 of the banks, and $100,000 city stock was *liberally* advanced by the corporation of Charleston.

The company have restricted themselves to 35 cents per 100 lbs. for 100 miles, as charge for freight. In Georgia it is 50 cents. Thus, a barrel of flour by the Carolina road, will, for 400 miles, pay but $2.80—by the Georgian $4.00. Now, the Pensylvanians bring flour from Pittsburg to Philadelphia for $1.12½. What will be the freight when the Mercer and Pennsylvania canals, the Baltimore and Ohio rail-road and the James river improvements are completed? What too, will be the difference of the shipping expense on the Patapsco and the James, and at Charleston and Savannah? These, which I take to be facts, give us the reason why Georgia can go to New York and get money at five per cent. and South Carolina be compelled to go to England, and possibly for—nothing.

President Hayne, in his call, (1838,) talks of lower rates. "The charge, (he adds,) for cotton "from Hamburg to Charleston, has never, we "believe, exceeded 25 cents (per 100 lbs. or for a "bale, $1,) and has been as low as 18 cents, (or "75 cents per bale,) or one-half the rates allowed by law." (pp. 14, 15.) Now, what says President Tupper? He states the power on the road to be equal to the business, "except cotton "down, *when the steamers were stopped for the "want of water.* Their charge was 75 cents; "that of the rail-road in 1837, $1.50 cents—of "course, the latter never carrying any important "amount. For the last three months, we have "been obliged to send up empty cars to bring "down cotton, there not being up-freight enough. "This has increased the expense without adequate profit, *the expenses being about equal "to the amount received, when the cars are only "loaded with cotton down.*" (Report 1st January, 1838.) The cost of the Charleston road was $125 per share in old stock, (now worth $112,) 25 per cent. on new stock payable for every share sold, in one share in the Louisville, Cincinnati and Charleston company's stock, with £5 paid thereon.* The balance one-third in cash, one-third in one year, and one-third in two years with interest and mortgage. The property apparently not yet rendered.

G. L. C.

* By the 8th section forfeiture is allowed. General Hayne, in his 1836 address, said, "*he will always be at liberty to forfeit his shares;*" so that the Charleston and Hamburg rail-road company may do the same. In three years they will get $2,400,000, and $5 per share, reducing it $100,000—but what is obtaining $125 for what is worth but $112, and clear of a crazy concern?

From the Farmers' Cabinet.

CULTURE OF ONIONS.

The town of Wethersfield (Conn.) has long been famous for the large quantities of onions which are annually raised and exported to the West Indies and the southern states. It has been superstitiously supposed there is something in the soil of Wethersfield peculiarly adapted to the culture of onions; and this whim has no doubt discouraged many from attempting the cultivation of this valuable root, in other sections of the country, equally favorable to its growth. It is true the soil of Wethersfield is a rich gravelly and sandy loam, well adapted to horticultural purposes; but the success of its inhabitants in the culture of onions, is attributable in a much greater degree, to a particular virtue in the fingers of its females, than any peculiar properties in its soil.

The business of raising onions in Wethersfield, is reduced to a perfect system. The following is the method of cultivation. Early in the spring the land is manured by ploughing in fine manure from the stable or barn-yard, in the proportion of about ten loads to the acre. That of neat cattle is preferred, as that of horses is considered of too heating a nature. After the manure is ploughed in, the land is well harrowed and laid out into beds five feet wide. The beds are laid out by turning a furrow towards them each way. This raises the beds above the aisles and gives an opportunity for the water to run off should there be occasion for it. They are then raked with an iron-tooth, or common hay-rake, and the aisles suffered to remain as left by the plough. Thus prepared, the beds are ready to receive the seeds.

As early as the season will admit, the seed is sown in the following manner. A rake, with teeth a foot apart, is drawn crosswise of the beds, for the purpose of making drills for the reception of the seed. The seed is then sowed in the drill, with the thumb and fingers, and covered with the hand. From ten to twelve pounds of seed is put upon an acre. After the plants come up they are kept free of weeds, which generally require four weedings. A hoe of a suitable width to pass between the rows is used in weeding, which saves much labor. When ripe they are pulled and the tops cut off with a knife. A sufficient length of top is left to tie them to the straw in roping. They are then roped, or bunched in ropes or bunches of 3½ pounds, as required by the law of the state. An ordinary crop is from 6000 to 8000 ropes to the acre. The quantity annually raised in the town, is estimated from 1,000,000 to 1,500,000 ropes which are sold at an average price of $2 a hundred, amounting to from $20,000 to $30,000.

Most of the labor in raising onions in Wethersfield, is performed by females. The cultivation

of an acre requires from fifty to sixty days' labor of a female, whose wages, including board, is about forty-two cents a day. Though many of the young ladies of Wethersfield spend a portion of their time in onion gardens; yet in personal beauty, education and politeness, they are not excelled by females of far less industrious habits.—*Connecticut paper.*

From the Pittsburger.

FOUL AND POISONOUS EARTHEN WARE.

Mr. Editor.—Sir: Will you permit me to acquaint the public, through your valuable journal, that there is a kind of crockery ware, manufactured in almost every city in the union, which is dangerous to use--and which the public will understand by the term common red pottery. This ware is made of common clays from the brick yards, and when formed, is coated with a liquid called glaze, which is nothing less than a coat of lead. The clays being of the commonest kind, cannot be subjected to any heat in the burning that will make them safe for family use—*being porous*—and it is very unsafe to deposit any articles of family use in them, such as milk, butter, or in fact water, as a portion of the lead glazing will be extracted, and the article will, in consequence, become dangerous to use. I have noticed no fewer then ten instances within the last twelve months, of familes sustaining injury by the use of such ware.

In selecting the article of crockery that is suitble for family use, it is only necessary to ascertain that the body of the ware—the clay—has been hard burnt, which any person can understand by the sound of it—if well burnt, it will have a clear sound. The poorest kind will not ring at all, and therefore can be easily detected. An article of this kind will, in the course of a month's use, become very foul. Let any one who doubts this break the vessel, and they will ascertain the fact. There is a kind of ware, however, that is manfactured in almost every city in the union, called stone ware, which is perfectly good for family use. This ware is formed of strong and superior clays, and undergoes a great heat in the burning,—and moreover, the glazing is not a thick coat of lead, but is accomplished by throwing salt into the kiln. All kinds of Liverpool ware are adapted to all purposes of family use, being made of sound clays and well burnt. As a preventive is better than a cure, if I should be the means of preventing any person suffering from the use of the poisonous article—lead—this advertisement will answer the ends I design.

C. S.

From the Farmers' Cabinet.

DIFFERENCE OF PLANTING CORN ON GRASS AND STUBBLE LAND.

It has been the prevailing custom with the farmers of New Jersey, for many years, to plough their sward for corn, that they might raise more than in tilling otherwise. I admit it is a good mode to till on the sward, and has always been allowed so by first rate farmers; but I find it greatly to my advantage to reverse the practice, in order to prevent the worm making such sad havoc in my corn-fields. About six years ago I planted twenty acres on the sward, and out of that the worms took eight, scarcely leaving a hill to be seen. The tenth day of June I had it planted over again, thinking the worms would not disturb it so late in the season, but still they preyed upon it, leaving about one half to grow. The next spring, I came to the conclusion to farm differently; instead of ploughing the sward, I ploughed up my stubble field, gave it a good harrowing, furrowed it out both ways, marled and manured every hill, and then planted the corn. In about a fortnight, I made a visit to the field for the express purpose to see if my corn had got up, or if the worms were taking it as they formerly had. I must acknowledge, that never since I have been a farmer, have I had my corn to come up as well; and I am fully satisfied, that is the best manner to farm where we are harassed with worms and other insects. Although the field which I farmed had two crops in succession; yet, notwithstanding, the third crop was much better, sounder corn, than I had raised for many years till I adopted this plan.

The manure I had left was considerable, after taking out enough to go over the corn-field; and of the remaining part I made a compost, mixed with marl or lime, which make it much better for wheat than to put it on in separate bodies or portions.

The field that came in regular rotation to plant with corn, I ploughed up for wheat and rye. After the process of ploughing was over, I took a three horse harrow, gave it a thorough harrowing both ways, to make the furrows lay level, that the grass roots might rot. Before the usual time of sowing came on, I took what manure I had, put it on regularly, till it was gone. The part of the field which had no manure, I sowed in rye, and the part which was manured I sowed in wheat. Thus I have farmed for five years, with much better success than I ever did in the same length of time previously.

From the Baltimore Farmer and Gardener.

CARROT FIELD CULTURE.

We had a conversation a few days since with a Yankee farmer, on the above subject, and being pleased with the course of his remarks, we prevailed on him to commit them to writing, in the hope that as the season is now approaching when this fine vegetable may be sown, we might, by bringing the topic to the notice of our readers, induce some of them to try the experiment of raising a crop for feed for their milch cows. The parsnip too, should command attention; the same mode of culture will serve for them as for the carrot, with these exceptions—that the drills should be about 18 inches apart and the plants stand about 4 inches asunder. Thus planted in the month of April, in suitable soil manured with well rotted manure, or a compost of spent ashes and mould, kept clean and hoed three times, they would yield from 500 to 1,000 bushels of roots to the acre, which might be left in the ground all winter to be dug as wanted for feeding.

To those who desire to have butter in winter,

possessing all the virtues of that article made from cows fed on May pastures, it will be only necessary to say that by a very little trouble they may realize their wishes.

The communication alluded to above will be found subjoined.

"The carrot flourishes best on a loam or sandy soil. The ground should be prepared by ploughing very fine to the depth of ten or twelve inches, fine manure, in quantity sufficient for common crops should be ploughed in, and the ground harrowed merely sufficient to level it, the seed should be sown in drills from twelve to fourteen inches apart; a machine made for the purpose is the best for sowing: four or five plants to a foot is sufficient to be left to come to maturity; a good day for planting corn is a good day for sowing carrot seed. The crop is usually from four to five hundred bushels to the acre. There is not a more profitable crop for feeding stock, raised in the N. England States, than the carrot, where the soil suits the crop; with a little more labor, you will get as many bushels of a much richer vegetable than the potato. One experiment has been made, by putting six cows into the stalls in December, and feeding five with corn-meal and hay, and one with corn-meal and carrots, and when slaughtered, the one fed with carrots was pronounced the fattest and handsomest beef. They are equally good for milch cows, increasing the quantity, and adding color and richness of flavor to the butter, but little, if any, surpassed by the best pasturing. They can be profitably used in many others ways by a farmer."

THE DROUGHT. THE GREEN SPRING LANDS OF LOUISA COUNTY.

To the Editor of the Farmers' Register.

Fluvanna, Sept. 10, 1838.

In compliance with a request in your last number of the Register, that reports of seasons and crops might be made to that journal from the different sections of country in which it circulates, I give you one which I am sure cannot be surpassed in melancholy of detail by any that may appear from other quarters. Confining myself to the section of country between the James and Rappahannock rivers, parallel with, and extending thirty miles below, the South-West Mountains, I can say from ocular proof and certain information, that no drought has ever come under the observation of the oldest inhabitant, that will compare in severity with that which has visited this country since about the middle of June. Within this range, I have heard of but one neighborhood, (about New Canton, on James river,) in which the corn and tobacco crops have been at all benefited by rain. On other water-courses, and on good highlands, they have been curtailed from more than half to *nothing* on inferior grades of soil. Pastures and meadows are burnt up, and the most luxuriant green-sward turf in our yards destroyed even to the root. To add to these grievances, the little fodder that had escaped being entirely blasted by drought, and a sirocco-like wind, which has prevailed throughout the summer, was killed on most flat lands by a *frost*, which occurred on the night of the 3d instant biting also, and in some instances destroying, a portion of the tobacco on low situations, particularly in those wanting sufficient circumambient moisture to protect them. For a week past, there has not been a mill within fifty miles of my residence that can grind more than a few hours in the mornings, and very few of them *at all*. Indeed, such is the impracticability of procuring meal, that I keep a man constantly beating coarse meal and hominy for my negroes, having neither potatoes nor peas from large plantings, to substitute for bread. *I* shall not want another such season to admonish me of the importance of a horse-mill on every farm where water-power cannot be relied on. Wheat crops have been fine throughout this country, but for want of corn the *small* farmers and planters and many of the *larger* ones will be compelled to use from the whole to a part of what is made, for bread and horse feed. By the way, could not your *disinterested* Baltimore correspondent R., *extend* his benevolence to our starving community—after first taking care of Maryland—in telling us whereabout in Virginia he ever saw such abundant crops of corn at $1 and $1 50 per barrel? Or might he not be induced to *change* his trade for the sake of a profit of two or three hundred per cent., which *I* (who am also "well known") will ensure him?* On a late visit to the Green Springs neighborhood, in the county of Louisa, I found that this *truly* green and fertile country had been visited by the same desolating evil, to a degree which an acquaintance with it of nearly thirty years had not allowed me to conceive. Still, it was refreshing to one whose sight as well as *hopes* from the soil had been seared by the presence of a universal desert, which had taken the place of luxuriant fields and green meadows at home, to witness even the partial contrast presented to the eye by the more flourishing appearance of vegetation here, where, superadded to the superiority of soil, there had been *one* shower more than was general in the parched region, which is the subject of my remarks. Had other evidence of the favored condition of this delightful country been wanting, the comparatively fat herds of *improved* cattle and flocks of Bakewell sheep with their creased backs and well-covered ribs, were enough to satisfy me of the superior richness of its grasses. By-the-by, *sheep* delight in and will fatten most kindly on grass partially killed by drought.

It may not be unacceptable to you, Mr. Editor, who feel, I know, a fostering interest in all that concerns the agriculture of Virginia, to receive some accounts of this garden-spot of it, which I believe you have never visited. The cognomen, "Green Springs," is, I suppose, derived from the mineral springs in the heart of this tract of country, on the property of Dr. James M. Morris. They were once very much resorted to, and with great benefit to invalids. Their constituent properties are said to be, (as the flavor of the water

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* The piece referred to was not a communication to this journal, but to a Baltimore paper. It was copied (for exposure) in the report on the "Season and state of crops," which accompanied No. 6, in an extra sheet, and which will be republished, immediately following this communication.—Ed. Far. Reg.

indicates) sulphate of magnesia, iron and sulphur; the springs are as bold and salubrious as they ever were. The wealthy proprietor has thought fit to suffer the improvements to go to decay, or they would doubtless be again the fountain of resort to many of the thirsty pilgrims who now seek health and pleasure in our mountains, where I think the waters little or no more salubrious, and the *mutton*, *certainly*, not as fine as at the Green Springs. This valuable body of land is, so to speak, a basin of about 10,000 acres, which seems, by a sport of nature, to have been dropped into the midst of one of the most barren districts of Virginia. Its upper margin reaches to within about ten miles of Peter's mountain—the tallest in the south-west range—is watered by five creeks and the river South Anna; the latter bounding its north-eastern extremity. One of the creeks, (the south-eastern,) and a barren ridge, in which most of the creeks rise, reaches across the north-western boundary. The fine character of this soil, is doubtless owing, in great part, to these water-courses, which all (but one, and on that lies very little of what is called Green Spring land,) disembogue into the South Anna at one point, in the farm of the late Major Watson, sen'r. In further proof of the intensity of the drought, I will here remark, that the beds of all of these usually bold streams, including the river, are now as dry as their banks, except here and there a stagnant pool, scarcely sufficient to slake the thirst of the cattle, which depend on them for existence. The principal farms in this tract belong to the descendants of Major Watson, dec'd., to Dr. J. M. Morris, and to the descendants of Mr. William Morris, dec'd. Of these, the Watson estate is considered the best; containing in all about 3,000 acres. Dr. Morris's may be rated next; and I cannot overlook, in this classification, a small, sub-divided tract, belonging to a family of Branches, equal, by *nature*, to the best. Mr. Wm. Ragland's, and a small portion of a farm lately sold by Richmond Terril, Esq., include nearly the whole of this body of land. The most interesting, and by far the most important feature in these lands, is, their remarkable adaptation to plaster, which has produced in the last ten or fifteen years a change in the face of this country, that is really miraculous. Dr. George Watson, of Richmond, owns, I think, the most beautiful and fertile farm, (with a few exceptions on James river,) that I know of in Virginia. He has been the most liberal user of plaster and clover, as well as improver in the exclusion of stock, in the neighborhood, though all are now reaping, in the fullest sense of the term, a rich harvest from these measures. There is no part of Virginia on which plaster acts more powerfully than here. The soil is generally of a dark-gray color, intermixed with small, round, ferruginous gravel, lying on three varieties of clay, red, yellow and blue—all tenacious. It has been analyzed, I understand, by Professor Rogers, and found to contain a large proportion of lime. On the surface of the country, is to be seen a quantity of grayish-black horn-blende, the disintegration of which gives a very rich yield of lime. In conclusion, I cannot say more for this delightful body of land, and its peculiar susceptibility to improvement from clover and plaster, than that the Watson estate and Dr. Morris's have produced this year 19,000 bushels of wheat, at 23 bushels to the acre, when, 15 years ago, one-fourth of that quantity would have been considered a very fine crop. The crops of corn and tobacco on these estates are sufficient for their consumption—tobacco better than I have seen off of James river—and one of their great staples, (the finest bacon and mutton in the *world*,) as promising as it can be. H.

SEASON AND STATE OF CROPS, IN AUGUST.

[Republished from the supplement to the last No.]

During the latter part of August we were absent from home and from editorial labors, for ten days, on a visit to the Fauquier Springs. It was the first time, since undertaking these labors and duties, that we have taken even half so much time of absence, for pleasure, health, or relaxation and rest; and we find that this, in spite of all precautions taken, has been productive of inconvenient omissions. The most important of these will be partially supplied by the issuing this extra sheet to accompany No. 6 of the Farmers' Register, of which the last pages had been printed before our return.

Reports of the season and state of crops, from the subscribers and correspondents of the Farmers' Register, have become so rare and irregular, and their receipt so little to be counted on, that we had ceased, (though with much regret,) to look for them, as matter for each monthly publication. Such reports are always the most numerous under the most disastrous circumstances; and the recent unprecedented state of heat and drought, and the general suffering of all growing crops, have served to bring more information than would come in half a year of prosperity and good prospects. At some cost and trouble, the failure to attend to these favors will be supplied by this extra publication, which will be sent with every copy of the September number, now ready to be issued, and the same will be also copied into the next succeeding number.

We shall copy below a few of the most distinct and full statements which formed parts of letters that awaited our return. But far more full and general information was gained by personal observation on our journey, and from the numerous intelligent farmers whom we met at the Fauquier Springs, from various parts of lower and middle Virginia, and from adjacent states. It is needless to particularize. The hot and dry weather has been more or less mitigated in numerous places by partial rains, some of which fell heavily and abundantly, for the time, when the country around generally remained parched, and but a small extent was even sprinkled. But scarcely any where did these partial and limited supplies of rain come soon enough to prevent a great diminution in the growing corn-crops; nor did the effects continue as long as was necessary to prevent renewed damage from drought afterwards. Reports of great and certain injury from the drought are heard from almost every part of lower and middle Virginia, (with the exception, perhaps, of very small sections that have been peculiarly favored,) and from the northern valley counties, west of the Blue Ridge mountains, from the Eastern Shore of Maryland, New Jersey, and Pennsylvania. The news-

papers are now full of such reports, which would extend the damage much farther; but we limit our views to what has been either seen or heard of in conversation with well informed and highly respectable observers of the scenes described, or obtained from correspondents, as much to be relied on.

In Gloucester only have we heard of even average crops of corn being expected; and two gentlemen from that county are the only persons heard from, who expect themselves to make better than average crops. The letter of one (August 4,) is given below; the other was seen as late as August 24. Also, on a few of the best farms on the lower part of James river, fair crops of corn are expected. Some of the poorer lands by the railway between Richmond and Fredericksburg do not seem to have suffered so much by drought, as by other causes of unproductiveness. Elsewhere, no estimate of any county would put the diminution of the corn crops at less than one-fourth below an average, and more frequently the estimate of loss would be one-half or more. We hope and trust that very few parts of the state have suffered half as much as the generally poor country of Stafford and lower Fauquier, which stretches from Fredericksburg to the Springs. The damage here must amount to 75 per cent. unless the land is totally worthless for corn in the best of seasons. The greater number of acres seen on the whole route of 36 miles will not yield three bushels of corn each—and many acres will not make even one bushel to each. The drought extends, with its worst effects, over the rich grazing lands of upper Fauquier, Albemarle, and the other Piedmont range of lands generally.

We know by experience the difficulty of forming in advance estimates of the product of growing crops; and also it is certain that the greater the calamity, the more it is magnified and exaggerated by the imagination and the fears of even the most cautious and judicious, as well as the most respectable and veracious farmers. Therefore we strike off a large amount of the usual estimates of general loss when we suppose that the present corn crop will be from one-fourth to one-third below an average gross product; and that through all the great regions spoken of above, there will be certainly no surplus, even if not a great deficiency to be supplied by importations from distant and more fortunate places. Gloucester, the only county in Virginia from which any *good* crops are reported, is part of a fine corn-producing district. From the next adjoining counties, and from the Eastern Shore of Virginia, nothing has been heard. The northern neck, or peninsula between the Potomac and Rappahannock, has shared in the general drought.

Even in places where heavy rains have fallen, and more than once, the injury is very great. The prevalence and unremitting action of great heat have been such, that the heaviest rains seemed to be entirely evaporated in a few days. During parts of July and August, and for several weeks, with very short intervals of cooler weather, the thermometer was from 90 to 95 degrees, at the maximum height, in the shade, in the country places in lower and middle Virginia, and from 95 to 100 degrees, and sometimes more, in the towns.

By information from North Carolina, the crops have suffered as severely by drought, in the upper parts of Northampton and Halifax, and in Warren, Granville, Caswell and Wake counties. On the low-grounds of the lower Roanoke (a very rich and highly important corn district,) the season has been favorable enough to promise average crops.

In Kentucky, as late as August 17, the season had been highly favorable to corn and other crops.

The crop of wheat, as stated in the notice in No. 5, has fallen much short of early expectations, and over a much wider extent of country than was then known. The unusually large proportion of straw, caused the general error of estimate. For the corn and other growing crops, we beg leave now to add the following particular statements of correspondents, to the general digest above.

"GLOUCESTER, VA. August 6th, 1838.

"I have just shipped my crop of wheat, which averaged nine bushels to one sowed, all of it on corn-land. The promise from the amount of straw on the land was much greater. The quality of the grain is fair. The season has been favorable for the corn crops in Gloucester; and I think a full crop must be made, even if there should be no more rain, the ground being now thoroughly soaked. But in this favored region the rains come with such regularity and frequency, that the poor and backward lands will no doubt be visited to the hearts' content of the farmers."

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"BUCKINGHAM, August 10th, 1838.

"The drought throughout this region is fearful. A bushel of corn to the acre will not be gathered from thousands of acres of the hill-land crop. May you not render a valuable service to the community, by a condensed exhibition, in your next or an early number of the 'Register,' of the most economical means of feeding stock, &c. How hogs are to be fattened this fall, and how a stock for the future is to be maintained through the winter, are important inquiries, in the solution of which you may afford important aid."

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"LUNENBURG Co. August 10th, 1838.

"Our agricultural operations are quite at a stand for the present; we are now experiencing the most distressing drought I have known for many years, if in my life. For several miles around my neighborhood, and in the vicinity of Mecklenburg Court-house, it really looks as if many, whose prospects were good a few weeks ago for an average crop of corn, will not now make scarcely a third or a fourth of a crop—some say scarcely seed—if it does not rain soon. The tobacco-crop cut short, I think, half, if not more."

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"HALIFAX, VA. August 12th, 1838.

"As I am at leisure this evening, I will drop you a few lines, partly on business, and for the purpose of giving your readers, through the medium of your 'Register,' a faint account of our crops that *are* made, and those that are not made, and, I fear, never will be, to any sort of perfection. Our wheat-crop was thought by some, previous to its being cut, to be very fine in quality, and promising good quantity; but, I believe, all, or at least the greater part, now admit themselves to have been deceived. The grain is generally small, and rather shrivelled than otherwise. The quantity is generally below the common estimate. As far as I have seen or heard, our oat-crop was next to a failure. At this time the corn-crop is suffering more from drought than I recollect to have ever seen one. It is nearly spent: in fact, I fear that it is entirely so. If rain does not come in a few days, I think we may not expect but little over half a crop in this upper part of

the county; indeed, I do not know or hear of any part of this county, Pittsylvania, or Campbell, where the drought does not prevail to an alarming extent. Our tobacco-crops, of course, are very backward, and are beginning to burn more at bottom than they grow at top. Tobacco, however, is a part of our crops that will recover from the effects of drought, when all hopes are *apparently* gone. If it should shortly rain plentifully, and be a late fall, we may yet make respectable crops of tobacco; but, at present, the prospects for corn and tobacco are dreadful—defying all accurate description."

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"MIDDLESEX, N. J. August 13th, 1838.

"Our farming prospects in this section of the country are *very* dull. Up to the middle of June, the prospect never was so flattering. Corn, potatoes, barley, oats, all as promising as could be desired. Since that time, however, we have had no rain that has done any thing but scald—the mercury ranging from 80° to 98° in the shade. The corn half way up the stalk is dead, one-third destitute of ears, and the residue so miserable, that no calculation can be formed of the result. Potatoes, of which many thousands of acres have been planted, will be an entire loss. Barley and oats half a crop. Rye very poor and shrunk. Buckwheat, on which great dependence is placed for winter bread, in many cases never came up, and on the whole only one-fourth of an average crop can be realized. Last night we had a thunder-shower, and slight rain from the south; but all is bright and hot again. Thermometer 91° at 10 A. M."

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"PRINCESS ANNE, VA. August 14th, 1838.

"We have had the driest and hottest weather I have ever seen or felt here. We have not had a good rain since the 18th of June, and only one or two light showers since that time. A great deal of our corn is burned up to the ear, and we cannot make more than half or two-thirds of a crop."

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"QUEEN ANN'S CO., MD., August 17, 1838.

"While writing, I will take leave to add, that never, I believe, within the memory of our oldest people, has this section of our country been visited with so early and destructive a drought as that which we have lately experienced. Our crops of corn, potatoes, &c. are nearly destroyed; and it is generally thought, so far as I have heard, and so far as my own observation extends, it verifies the opinion, that this peninsula cannot now, whatever rains may come, even the most favorable, make any thing like corn sufficient for its necessary consumption. Our clover fields are burnt up, with scarcely the appearance of vegetation upon them, even since the late rains. Indeed, the whole face of the country wears a most melancholy aspect. We made large crops of straw, in proportion to the ground sown in wheat; which was less, probably, from a fourth to a third of that which, some years ago, used to be put in that grain. The yield from the straw, however, is much less—say from twenty to thirty per cent.—than a fair average, owing principally to rust. The rye and oats crops also turn out badly. But enough of this lugubrious matter."

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"FROM LOUISVILLE, KY., August 17.

"We have had through the months of June and July, and so far in August, the most favorable weather; plenty of rain and the crops of wheat, corn, &c., are superabundant. Owing to the scarcity of plants, the coldness of the spring, and the low prices last season, there will be a small crop of tobacco made."

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COGGIN'S POINT, PR. GEORGE, VA., Aug. 26.

"Our corn crop, I much fear, threatens to be even worse than I had anticipated. The stalks had made so much improvement in growth, that I thought some weeks back, there might be some approach to an average crop made on this farm. A careful examination yesterday confirms my later and worst fears. Though the stalks look generally well, the number that are without ears I would suppose to be nearly one-third; and the remaining two-thirds are very indifferent. This is what I feared would be the result, from the burning up by the extreme drought (as formerly stated,) of so great a proportion of the tassels, before the exhibition of the silks; but the extent of injury from this cause is much greater than I had anticipated. All prospects of even half a crop here, I fear, are now dissipated.

Directly in contradiction to all such accounts, from these and numerous other less authentic sources which all the newspapers are full of, the following communication appeared in the 'Baltimore Patriot' of August 17th. We know not whether it was to this very positive, and seemingly very plausible statement, or to other causes, that was owing the latter part of the remarkable occurrence in the Baltimore market of a sudden rise in the price of corn, of 15 cents or more, in the bushel, and as sudden a fall to the first mark, and all within a few days.

[To the Editor of the Baltimore Patriot.]

"I having seen a dreadful account given in the public prints, concerning the failure of crops, which by all appearance, has caused a great rise in the price of grain. I, as a well known citizen of Baltimore, deem it my duty to let the commercial part of the citizens know the true state of the crops of grain in Virginia and North Carolina. I was continually travelling in the above states, from the first of June to the first of August, and have been accustomed to travel in the same states for the last eighteen years, and do say, I never saw such fine crops of corn and wheat before, in any place; and I heard it asserted, they excelled the crops of any season ever recollected, by the oldest farmers—the corn was getting hard then, and considered as good as made. Some of the farmers had succeeded in engaging their growing crops of corn at one dollar and fifty cents per barrel, but that price could not be easily obtained. I heard a farmer say that he did expect corn to be as low as one dollar per barrel, at the heap when gathered.

I write the above for the benefit of my fellow citizens, that they may know how to make their purchases. And if any gentleman should suspect me of having any personal interest in view in the matter, I assure them, I am neither a merchant nor speculator in any article whatsoever; and they can have my name by applying at the Patriot office. R."

If some of our subscribers, in every different region, would regularly furnish monthly reports of the state of crops, so as to enable us to present in extracts from their letters a full and authentic statement of the general condition of the country, it would be of great value, as information, to the readers of this publication, and to the country at large. One of the certain effects would be to prevent groundless panics in the markets, and also to extinguish such reporters as the author of the foregoing communication.

August 29, 1838. ED. FAR. REG.

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EXTRACTS OF PRIVATE CORRESPONDENCE. SEASON AND STATE OF CROPS.

Hanover, September 5, 1838.

"We have made more than half an average crop of corn in this neighborhood, notwithstanding the long continuance of the drought. I have, however, seen many fields of corn between this and Charlottesville, which will fall below half an

average crop. While in the neighborhood of William Fulcher, of this county, I understood that he had last year commenced seeding wheat the latter part of August, finishing in September; and that his crop was considered a good one. I did not see Mr. F. himself, but some of his near neighbors gave me this information. While I was in the habit of making wheat, I generally found the 10th of October to be the best time to begin: of course was much surprised to hear that seeding had been successful so much earlier."

—

Brunswick, Sept. 8, 1838.

"The high price of the mulberry is retarding the culture of silk, much to its injury. I had determined to retain 20,000 of my best trees; but I could not stand the temptation of the price offered for them, in these dry and high-pressure times. I am extremely anxious that the culture of silk should succeed in this section. Our soil is gone—no lime, no marl—and the litter very poor with which we used to manure our lands, such as oak-leaves, &c. It is really discouraging to view the galls and gullies on our farms, and more fatiguing to walk over them; for the gullies are so wide you can't jump them; they must be headed. We must either turn our attention to some other crop, that is not such an exhauster of land, or desert the country. I am now done with the cotton and tobacco crops on my home plantation, and shall rely on the silk crop to sustain me; and, instead of improving a few acres of land for cotton or tobacco, I shall have time to manure double the quantity of land, which will increase my grain crop, so much needed at this time."

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September 10, 1838.

"I have no knowledge of the culture of the mulberry, or indeed of farming in general, other than that I have obtained from an occasional perusal of your valuable journal. Whilst sojourning at * * * * I picked up a number of your periodical to dispel an hour's dulness. I was soon interested; read each succeeding number with eagerness; became a convert to your opinion, that "more money, apart from the consideration of comfort and many other et ceteras, may be realized by a judicious system of farming in Virginia, than by the culture of sugar or cotton at the south;" changed my occupation and residence, and have now set down to attempt the realization of hopes which you have engendered."

—

Goochland, Va., September 10, 1838.

"Now that the tops are taken from the corn, a tolerable estimate may be formed of the product. On the James river low-grounds, not more than half a crop will be gathered; while on the highlands there cannot be more than one-fourth. No person that I have seen, has expressed a more favorable opinion than this. But the deficiency is not owing entirely to the drought. The chinch bugs have infested the country in myriads; and their depredations have curtailed the crops of corn nearly or quite as much as the dry weather. Not a farm, as far as my observation extends, has escaped their ravages; in some places they have been so numerous as to utterly destroy whole acres, besides materially diminishing the product of the fields at large."

Lake Phelps, N. C.,
Sept. 11, 1838.

"I cultivate the rich, low swamp lands of North Carolina, and this is the thirty-fifth crop. I have never known it suffer so much from drought. I cannot get more than two-thirds of a crop. My crop of wheat was as good in quality and weight, except once, (1805,) as I ever raised; but fell far short in quantity, averaging only about eighteen bushels to the acre."

—

Montgomery Co., Md., Sept. 11th, 1838.

"There is a complete failure of every crop that is grown in my neighborhood, with the exception of wheat. Corn, tobacco, oats, and the whole list of culinary vegetables have fallen victims to the incessant, and yet unending drought of the past summer. The rye crop, though abundant in straw, yields little or no grain, and that very defective, in consequence of the heavy rains that fell in the month of May, when it was in blossom. I am fully convinced that there will be less grain made in our state this year, than there was last, when there was literally no wheat; and the crop, however good it may prove this, cannot make up the deficiency in the other crops."

—

Fluvanna, 20th Sept. 1838.

"The equinoctial spell was ushered in this morning, with great parade of thunder and lightning; but as yet, (12 o'clock,) very little rain has fallen, and the clouds seem light and hard, though the wind is at a rainy point, and the *season* must bring more. Several days and nights of such as we have had, would be required to start our mills, of which three can grind in a distance of thirty miles, and I believe no others within fifty. The rains that fell about ten days ago, were confined to the lower country. Here, there was a heavy *dew:* in Albemarle, not a drop. The dust in the stage-roads of that county, was, yesterday, above the horse's fetlocks, an impalpable powder, and threatening to suffocate man and beast."

—

On the 11th and 12th of September, there fell through eastern and part of middle Virginia, a most abundant rain. If too late to benefit the corn, it at least permitted the fallowing and ploughing of cloverley for the next wheat crop to be commenced, in proper manner, though much too late. The rain did not extend to the upper country. The general inability to plough for wheat during the best season, and through the best clover and wheat region, must injuriously affect the wheat crops of 1839.

P. S. Sept. 25th and 26th.—Steady and abundant rain.—Ed. Far. Reg.

LATEST REPORT OF THE MULTICAULIS TRADE AND MANIA.

A late number of the Saturday Evening Post of Philadelphia, gives the following statement.

"The sales of mulberry trees have been very brisk for weeks past, even to the amount of several hundred thousand dollars. Many culturists who were disappointed in obtaining trees last year—or postponed purchasing on the ground that plants would be a drug and "as cheap as a broom" this year, have now taken "time by the forelock," and bought largely at higher prices than when they were "so very scarce and dear" six and nine months ago.

"The prices are so various, that it is nearly impossible to give exact estimates. Buyers say the price is 50 cents per tree—the sellers, that it is 75 cents.

"Within a few days trees have been offered at 15 cents, 17 cents, and 20 cents per foot, the root with one inch of stalk being counted as one of the feet, and some fine plants have been sold at $1, and $1.50 the tree. The general belief is, that nearly all the trees for sale within 40 miles of this city have been sold. The growers generally choosing to keep a large stock on hand for seed the ensuing season; and well they may like to continue propagating, for in many instances their profits have reached 1,000 per cent, while others who have not been so fortunate in their cultivation or soil, have netted 500 per cent. within the last six months."

A purchase has very lately been made of more than 20,000 young trees, untrimmed, from J. Atkinson, Esq., Pitt county, N. C., at 40 cents. Only a few of them are of the second year's growth, nearly the whole being from cuttings set out last spring, (1838.) But, as stated by the purchaser, the youngest trees are uncommonly fine, being nearly or quite 6 feet of average height; and some few of the youngest which grew on hog-pen ground, are nine feet high. These are strong evidences of the superior and remarkable fitness of the climate of the southern states for this valuable tree. It is now a matter of congratulation, that this large parcel is purchased for planting in North Carolina. The demand of purchasers from the northern market has been so great as to threaten to leave in the south but a small stock to plant next spring.

A gentleman who has a lot of multicaulis trees in Petersburg, has been offered, and refused to take $1 per tree, (untrimmed,) for all the trees of more than one season's growth. These plants are of the second and third season; but not having been taken care of, as to proper soil and culture, they are not six feet, average height, and of much less size than all ought to have in two seasons from the cuttings. Of some of the same original stock, (brought from the north when very small, and set out in spring of 1837,) but which have stood in rich land, a few entire plants have been sold at $5 a-piece. These were not the best. They had all been cut off near the ground last fall, and the whole of the present tops, (now 7 or 8 feet high,) are of this season's growth.

Contracts have recently been made here for some thousands of plants of the growth of 1839, untrimmed, and to be from 2 to 4½ feet high, to be delivered in the autumn of 1839, at 12½ cents the plant.

A friend has shown to us letters, just received in answer to his inquiries, from the owners of the most entensive nursery in New York, and another in Baltimore. The prices of both are copied below, not only for present information, but also for the admiration of the curious hereafter, when this mania shall have subsided.

The tariff of prices at which the New York establishment offers to sell, is as follows, for the plants, all the side-branches trimmed off.

Plants	1 to 2 feet high,	- - -	20 cents.
"	1 to 3 " "	- - -	25 "
"	1½ to 2 " "	- - -	22 "
"	1½ to 2½ " "	- - -	25 "
Plants	1½ to 3 feet high,	- -	28 cents.
"	1½ to 3½ " "	- - -	31¼ "
"	1½ to 4 " "	- - -	35 "
"	2 to 4 " "	- - -	38 "
"	2 to 5 " "	- - -	45 "

The writer adds, that when the expected state bounty for silk is offered, that all the plants in the United States could not supply the demand in the state of New York alone.

The answer from the Baltimore nursery men, says, "We sold last week our entire crop at 22½ cents—50 and 60 cents per tree, without side branches."—"Cuttings with two eyes are now worth $60 per thousand."

A letter from another well-informed friend in Baltimore, dated September 22, states the recent sales between the speculators, have been at 10 cents the foot of length for trimmed plants, and 20 cents the foot for those not trimmed.

From the American Silk Grower.

MULTICAULIS PLANTS ON LONG ISLAND.

We are indebted to Wm. Kenrick, Esq. of Newton, Mass., who recently made us a visit, for some information concerning the mulberry prospects at the north and east. He informed us that his trees had prospered finely, and that he should have 100,000. On his way hither he called at the nursery of William Prince and Sons, on Long Island, and said that those gentlemen planted six acres of cuttings and three acres of trees. The trees had done well, but the cuttings had failed, or nearly so, as had all the cuttings that were planted on the island. He thought, however, that Prince and Sons might have 100,000, but not more. Why will gentlemen advertise ten times as many trees as they have growing? Will it not deceive and injure individuals and the public?

For the Farmers' Register.

ON SEEDLINGS OF CHINESE AND OTHER MULBERRIES.

In a late number of the Register, there are some editorial remarks to establish the fact, that seedlings of the morus multicaulis do not conform entirely with the characteristics of the parent. I have recently had an opportunity of making a careful examination of several multicaulis seedlings; and I can also certify, that, though there is a general family likeness, they are certainly different from their parent. At the same time, there is sufficient testimony to prove, that in some instances the resemblance is complete. Gideon B. Smith, of Baltimore, who is good authority on the subject, contends for their identity of character; and David Thomas, of New York, one of the most intelligent and scientific botanists in this country, assured me in the course of some remarks he made on the article "on agricultural humbugs," that he had several seedlings which were precisely like the original; and he had no doubt the mul-

ticaulis was a distinct species, and would produce its like.

It must now be admitted that the multicaulis will run into varieties; but does this prove that it is only a variety of itself? By no means. There is no species of mulberry that has been brought into general cultivation, that can be relied on to reproduce its exact likeness in all, or even in a majority of cases. Indeed, the whole family of *morus* seems disposed to be sportive; and the long course of culture to which they have been subjected, has contributed, as in the case of many other plants, to increase this propensity. Witness the rose and the dahlia, the varieties of which are endless, but which to this day would have retained all their original features, if they had been permitted to remain in their natural *habitats*.

I have recently examined a great number of seedlings of several species of mulberry. The varieties of the *morus alba* are endless, as is well known; and there is the same want of uniformity in the offspring of the Canton, the Alpine and the Brussa, respectively. In all these species there are a multitude of varieties which are totally worthless; and if the multicaulis was produced in the same manner and to the same extent, this character would doubtless apply to its offspring with the same force. But throughout all these diversities, a practised eye will, without any hesitation, assign each individual to its appropriate species. If the multicaulis could ever run into the white mulberry, there might be some reason for the belief that it was derived from that species. The white mulberry retains its glossy, brilliant foliage through all generations; and in the multitude of individuals which have derived their existence from it, none can be produced which a botanist could possibly mistake for the multicaulis. On the other hand, whatever shape the leaves of multicaulis seedlings may assume; however they may degenerate in size; it is equally out of the order of nature that they can ever take the specific marks of the white mulberry.

A most curious and remarkable instance of the sportive tendency of the white mulberry, may be seen at John Carter's nursery, near Richmond. The individual was originated on his grounds, near to where the *multicaulis* and the *alba* had both fruited; and different as it is in some respects, from any other mulberry plant which has come under my observation, yet its parentage is sufficiently obvious. I cannot concur with the originator, that it is a hybrid. In its growth it is rather dwarfish—the joints of the branches are not more than the fourth of an inch apart—the leaves are about five times as large as the white mulberry leaf, but in shape and character very much resembling it; and upon each branch there is such a dense mass of foliage as entirely to exclude the stem from observation. It deserves to be propagated as a curiosity—or rather as a monstrosity.

TUCKAHOE.

From the Quarterly Journal of Agriculture.

USEFUL INSTRUCTIONS REGARDING THE MILKING OF COWS.

The operation of milking is performed differently in various parts of the country. In some, the dairy maid dips her hand into a little milk, and by successively stripping the teat between the finger and thumb, unloads the udder. The plan, however, is attended with the disadvantage of irritating more or less the teat, and rendering it liable to cracks and chaps, which are followed by inflammation, extending to the rest of the quarter. This accounts for the disease occurring more frequently among the cows under the charge of one milker than it does in those which are under the charge of another; and, as this practice is more common in some parts of the country than in others, it also accounts for the disease being more common in these parts. This plan of milking, where the irritation is not sufficient to excite the extent of inflammation to which I have alluded, frequently produces a horny thickening of the teat, a consequence of the cracks and chaps, which renders it more difficult to milk than when in its natural state; and at the same time predisposes to inflammation, when any case occurs to set it up. These effects may be, and are almost entirely avoided, by the more scientific plan of milking adopted in other parts of the country, where, instead of drawing down or stripping the teat between the thumb and fingers, the dairy maid follows more closely the principles which instinct has taught the calf. (The calf jerks its nose into the udder and forces down the milk.) She first takes a slight hold of the teat with her hand, by which she merely encircles it, then lifts her hand up, so as to press the body of the udder upwards, by which the milk escapes into the teat, or if (as is the case when some hours have elapsed between milking times) the teat is full, she grasps the teat close to its origin with her thumb and fore-finger, so as to prevent the milk which is in the teat from escaping upwards; then making the rest of the fingers to close from above downwards in succession, forces out what milk may be contained in the teat through the opening of it. The hand is again pressed up and closed as before, and thus by repeating this action, the udder is completely emptied, without that coarse tugging and tearing of the teat which is so apt to produce disease.

From the Farmers' Cabinet.

BROKEN LIMBS OF ANIMALS.

An idea prevails with many persons, that broken limbs of horses and other quadrupeds cannot be cured, owing to the difficulty of keeping the part sufficiently at rest during the time necessary for a broken bone to heal or acquire sufficient strength to support its share of the animal's weight.

I heard of a case, some months since, which was successfully treated in the following manner, viz: two pieces of scantling sufficiently strong to support the horse were placed over and parallel with him in the stable; a piece of strong linen was then passed under him and the two opposite ends confined to the scantling so as to raise him from the ground or floor when required: a wooden box was provided with a bottom, two sides, and one end, composed of boards nailed together, and of sufficient length, width, and depth, to contain the leg from the knee to the foot, inclusive, besides a space of half an inch or more, on each side of the leg to admit the necessary bandages, &c., with the bottom cut away sufficiently for the foot to en-

ter and retain its natural relative position with the leg. The broken leg was confined in this box, and treated in the usual manner that bones are when broken, and the box together with the leg from the knee to the foot confined in a horizontal position or nearly so, by straps of leather or other suitable substances passed over the horse's back and the two ends confined to the box; the horse was permitted to put his other three feet upon the floor sufficiently to preserve a healthy action to the limbs, but not so as to permit him to displace the broken limb in the box and injure it. A cure was effected in the course of a few weeks. This was one of the anterior (or fore) legs. I see no difficulty in treating a hind leg by partially suspending the animal in this manner, and varying the other parts according to the particular nature of the case. Z.

Chester county, Pa., June, 1837.

NEW BRANCH OF THE RICHMOND AND FREDERICKSBURG RAILWAY.

We understand, that the new rail-road, (about three and a half miles long, to connect the Deep Run Coal Pits with the Fredericksburg and Richmond rail-road,) was opened on Wednesday last. The road is said to be admirably constructed. The field of coal in that region is very extensive. Several shafts are about to be sunk; and the enterprising Mr. Barr has already 150,000 bushels raised. This branch road has been constructed by the proprietors of the mines; and they are entitled to the privilege of bringing their coal down the main stem to Richmond, free of toll. When the road shall have thus been paid for, it will be transferred to the Fredericksburg and Richmond rail-road company.—[*Rich. Enquirer.*

MONTHLY COMMERCIAL REPORT.

The most important feature in the transactions of the present month, is the great advance in the price of grain. Inadequate supplies of wheat for the daily demand of the millers, first gave an impulse to the market; but accounts from England to the 10th August, by which it appears that while this country was oppressed with heat and drought, the very reverse prevailed there, and apprehensions were entertained of entensive injury to the grain crops, created great excitement in all markets. Prices advanced rapidly in England, and were expected to attain, in a few weeks, to the maximum average of 73 shillings per quarter, (of 560 pounds of wheat,) at which foreign grain is admitted almost duty free. Accounts to the 8th of this month, daily expected by the steam-packet, will, in a great measure, decide the question, as to the English crops. In Holland, also, the weather was unfavorable, and the stocks of old grain in the north of Europe were unusually small. The price of wheat consequently advanced in our markets until it reached $1 70 to $1 75 in Richmond, $1 85 to $1 97 in Petersburg, and $1 50 to $2 00 in the northern cities, where there is a greater diversity of quality. Some shipments of flour have already been made to Liverpool from New York and Philadelphia, at $9 00 per barrel. These may, perhaps, be considered rather precipitate, as the result of the crop is yet doubtful—a few days will decide it.

There have been sufficient rains below the falls of the rivers to revive vegetation; but higher up the country, they have as yet, (22d September,) been so moderate, that the water courses are not filled. Few of the country mills could grind, and interior navigation has been in a great measure suspended. The same state of things has prevailed to the north and west; so that supplies of grain and flour, which are represented as very abundant in the western states, will be moderate from thence until next spring. Corn has advanced to 95 to 100 cents per bushel. In the lower part of North Carolina, and in some of the lower counties in Virginia, the crop is said to prove better than had been anticipated; but, in the upper country, very deficient. The price of bacon has gone up to 16 to 17 cents.

The weather, for some days past, has been favorable for tobacco; but "*the stand*," (as the planters term it,) was so small, and the season is now so far advanced, that there is no doubt the crop will prove very short, even with a continuance of favorable weather; and, should there be a frost soon, a large portion of the crop will be destroyed. This article has attained to high prices: $6 50 to $13 60, embrace the extremes, except for a fancy article. The export to Europe has been moderate, as are the stocks on hand compared with former years.

The receipts of cotton, during the month past, have been very light. The quantity received in all our ports, since 1st October last, is now stated to be 1,808,000 bales, against 1,360,000, in 1837. The export, 1,580,000 against 1,155,000. Prices have been sustained, better than could be expected, under so heavy a supply. In this market, 10 to 11 cents is now quoted. A few hundred bales of the new crop, received at New Orleans, and represented as very fine, commanded 12½ to 13½ cents, while the quotation of old is 7 to 11 cents. The crops in Louisiana, Mississippi, South Alabama and Arkansas, are stated to be fine and abundant. From other quarters, the accounts vary. In North Carolina and Virginia, the crop is undoubtedly very short.

Exchange on England has recently been at 9½ to 10 per cent. premium; but the importation of grain into Great Britain will tend to reduce the rate between that and other countries, to cause an exportation of specie, and to advance the rate of interest in England. X.

September 22, 1838.

P. S. *Sept.* 27.—The steamer, Great Western, has arrived at New York from Bristol, whence she sailed on the 8th inst. The weather in England had been generally favorable for harvesting, since the advices previously received; and there was some depression in the prices of grain. The average of the preceding six weeks, had, however, reached 72 shillings and 11 pence, or within one penny of the rate for admitting bonded wheat, at the duty of one shilling per quarter.—There would, therefore, be a very large quantity, (not less than a million of quarters) entered for home use, which would tend to reduce the price. This news has caused a slight decline here. In the prices of cotton and tobacco, there was little variation.

NOTICES AND REPLIES TO CORRESPONDENTS.

There is no authorised general agent or collector for the Farmers' Register IN VIRGINIA; nor will any be appointed soon, nor without notice being published. Some of the reasons for this departure from general usage, were stated at page 127, No. 2, of this volume, to which those who have made inquiries are referred.

There being no agent to receive payments is no impediment to these being made, whether by new or by old subscribers. In either case, if money is sent through a post-master's hands, or evidence is taken of a letter containing money, and properly directed to the editor, being committed to a post-office, the loss is the editor's, and the proper credits will be allowed, and the copies sent, upon information of the transmission, though the money may not have been received. (See the conditions of Farmers' Register.)

The notes of all specie-paying banks will now be received for subscriptions to the Farmers' Register. The banks having generally resumed specie payments, it is hoped that much of the inconvenience suffered by subscribers, and of heavy pecuniary loss by the proprietor, during the time of suspension of payments, may hereafter be avoided.

"A subscriber," whose letter was received through the post office too late in last month to be answered, is requested to refer to and read the "Address to the friends and supporters of the Farmers' Register," at page 63, No. 1. of this volume, for the explanations and reasons which he deemed wanting.

The author of the anonymous communication from the north, (accompanied by a private note signed, *as was then supposed*, by a real and responsible name,) containing serious charges against a large and noted seller of mulberry plants, is informed that it will not be published in the Farmers' Register, until sustained by known and undoubted authority. Our pages will always be open to well established statements, *from responsible sources*, of any of the numerous impositions practised upon the agricultural public.

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